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NATURAL RESOURCES

OF THE

PRAIRIE PROVINCES

1923

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NATURAL RESOURCES

of the

PRAIRIE PROVINCES

A BRIEF COMPILATION RESPECTING
THE DEVELOPMENT OF MANITOBA
SASKATCHEWAN AND ALBERTA

1923

DEPARTMENT OF THE INTERIOR
CANADA

HON. CHARLES STEWART
Minister

W. W. CORY, C.M.G.
Deputy Minister

PREPARED IN THE
NATURAL RESOURCES INTELLIGENCE SERVICE
UNDER THE DIRECTION OF F. C. C. LYNCH, SUPERINTENDENT

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OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1923

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CLIMATE

The climate of the Prairie Provinces is remarkably healthy, and though it is subject to extremes the dryness of the air mitigates the severity of the low temperatures of winter and alleviates the unpleasantness usually associated with high summer temperatures in humid atmospheres. In Alberta the winter cold is also tempered by the warm chinook winds, which at several intervals during the winter blow over the country from the west and southwest. In certain sections of the country such as southern Alberta and Saskatchewan, particularly the former, the light precipitation calls for dry farming methods. Some hail falls annually in various districts, but its action, though severe at times, is usually local, and loss is frequently covered by provincial hail insurance.

Manitoba has a mean annual temperature of 36° Fahr., with a growing season temperature of 56° Fahr. on the average, a precipitation of about 20 inches annually, chiefly rain, and a daily average sunshine record of eight to nine hours during the growing season.

Saskatchewan has a mean temperature of 36° Fahr. for the year with a growing season temperature of about 55° Fahr. and a mean annual precipitation of only about 16.75 inches. The sunshine average is nearly nine hours a day in the growing months. The precipitation, though light, is practically all rain and comes as a rule when most needed, in May, June and July.

Alberta has a mean annual temperature of 38.8° Fahr. which is higher than that of either Saskatchewan or Manitoba, but a lower annual rainfall, namely 16.1 inches. The sunshine record is high for the growing season, about ten hours a day, on the average, during April to September inclusive. The precipitation is practically all rain. The growing season mean temperature is about 60° Fahr.

The following temperature, precipitation and sunshine tables are intended to give a general survey of climatic conditions over a period of years. The various stations have been chosen, firstly, to give adequate information regarding each section of the country in which people would be interested, and secondly, to secure a station in each of the different sections where observations had been recorded for the longest time.

The temperature figures are obtained as follows: At the stations of the Dominion Meteorological Service self-registering thermometers record temperatures during each twenty-four hours. The highest and lowest temperatures thus recorded are tabulated and monthly high and low averages obtained. The two columns under temperature are then arrived at by averaging these monthly figures over the period of years in which observations have been taken at that station. Temperatures below zero have the minus sign (—) prefixed.

Under the collective term precipitation is included all moisture, rain, snow, hail, sleet, etc., which has been precipitated from the atmosphere upon the earth. This moisture is measured on an impervious surface and is expressed in inches of depth. Snow figures are given separately and are dealt with as indicated in the table. Due to the fact that only seven months' precipitation is given, an additional figure has been added showing average yearly total precipitation over the period of years shown in the table.

The sunshine table gives, in the first column, an average of the actual number of hours sunshine recorded during each month over the period of years named, and the second column gives the number of hours of possible sunshine if there had been no cloudy days, rain, etc. In those cases where sunshine records were not available for the station given, figures from the nearest station have been substituted.

MANITOBA

TABLE SHOWING TEMPERATURE, PRECIPITATION AND SUNSHINE.

Average figures given.

WINNIPEG

Height above sea, 760 feet

Months	Temperature Deg. Fahr.		Precipitation in inches			Sunshine	
	Observations for 30 years		Observations for 30 years			Observations for 19 years	
	Average Highest	Average Lowest	Rain	Snow	Total	Number of hours	Hours of possible duration
January	7	−14	0·0	8·1	0·8	110	266
April	50	27	1·1	4·4	1·5	207	412
May	65	39	2·1	0·9	2·2	251	479
June	75	50	3·0	.....	3·0	250	485
July	78	54	3·3	.....	3·3	291	488
August	75	50	2·2	.....	2·2	257	444
September	66	42	2·1	0·1	2·1	180	377

Average yearly total precipitation, 20·2 inches.

BRANDON

Height above sea, 1,265 feet

Months	Observations for 20 years		Observations for 30 years			Observations for 21 years	
January	8	− 3	0·0	9·6	1·0	110	267
April	52	26	0·7	4·0	1·1	191	412
May	65	37	1·8	0·4	1·8	228	476
June	73	47	3·1	0·2	3·1	220	486
July	78	52	2·5	.....	2·5	277	488
August	75	48	2·3	.....	2·3	250	445
September	67	39	1·4	0·4	1·4	182	377

Average yearly total precipitation, 17 inches.

DAUPHIN

Height above sea, 957 feet.

Months	Observations for 16 years		Observations for 16 years			
January	9	−11	0·0	10·3	1·0	
April	49	− 8	0·3	1·1	0·4	
May	63	6	1·9	0·2	1·9	
June	74	27	2·6	.....	2·6	No observations
July	78	34	3·0	.....	3·0	
August	75	49	2·1	.....	2·1	
September	68	53	2·1	0·1	2·1	

Average yearly total precipitation 17·7 inches.

THE PAS

Height above sea, 860 feet.

Months	Observations for 12 years		Observations for 12 years			
January	− 1	−18	T	6·9	0·7	
April	46	23	0·4	4·3	0·8	
May	59	37	1·3	2·2	1·6	
June	71	49	2·2	.....	2·2	No observations
July	74	58	2·3	.....	2·3	
August	71	51	2·3	.....	2·3	
September	60	40	1·6	T	1·6	

Average yearly total precipitation 15·1 inches.

SASKATCHEWAN

TABLE SHOWING TEMPERATURE, PRECIPITATION AND SUNSHINE

Average figures given

QU'APPELLE

Height above sea, 2,115 feet

Months	Temperature Deg. Fahr.		Precipitation in inches			Sunshine*	
	Observations for 30 years		Observations for 30 years			Observations for 20 years	
	Average Highest	Average Lowest	Rain	Snow	Total	Number of hours	Hours possible duration
January	9	−10	0·0	6·9	0·7	81	248
April	49	26	0·4	6·7	1·1	170	413
May	62	37	2·4	3·1	2·7	214	481
June	71	48	3·7	.....	3·7	207	489
July	76	52	2·8	.....	2·8	272	491
August	73	49	2·0	.....	2·0	229	446
September	64	40	1·3	1·0	1·4	163	377

Average yearly total precipitation, 19 inches.

SWIFT CURRENT

Height above sea, 2,392 feet.

Months	Observations for 30 years		Observations for 30 years			
January	15	− 2	0·0	6·1	0·6	
April	54	29	0·5	3·2	0·8	
May	64	39	1·7	2·0	1·9	
June	73	48	3·1	.....	3·1	No observations
July	80	52	2·4	.....	2·4	
August	77	49	1·8	.....	1·8	
September	66	40	1·1	1·3	1·2	

Average yearly total precipitation, 15·1 inches.
*Figures for Qu'Appelle not available. Indian Head figures substituted.

BATTLEFORD

Height above sea 1,592 feet

Months	Observations for 20 years		Observations for 20 years			Observations for 16 years	
January	7	— 9	0·0	4·7	0·5	105	254
April	51	27	0·2	2·7	0·5	205	418
May	65	39	1·9	0·8	2·0	199	488
June	72	48	3·4	.....	3·4	227	501
July	76	52	2·4	.....	2·4	264	503
August	74	48	1·9	.....	1·9	236	452
September	65	39	1·4	0·4	1·4	170	378

Average yearly total precipitation 14·8 inches.

PRINCE ALBERT

Height above sea, 1,450 feet

Months	Observations for 30 years		Observations for 30 years			Observations† for 10 years	
January	5	—17	0·0	8·2	0·8	92	254
April	49	24	0·4	4·4	0·8	221	412
May	63	35	1·3	1·6	1·5	263	488
June	71	45	2·7	.....	2·7	280	500
July	74	50	2·3	.....	2·3	295	452
August	72	46	2·3	.....	2·3	273	453
September	62	37	1·3	0·7	1·4	191	379

Average yearly total precipitation, 16 inches.

KAMSACK

Height above sea, 1,445 feet

Months	Observations for 12 years		Observations for 12 years			
January	5	—17	0·0	11·0	1·1	
April	47	23	0·1	3·4	0·5	
May	62	36	1·2	1·8	1·4	
June	69	46	2·6	0·4	2·6	No observations
July	75	50	2·7	.....	2·7	
August	74	45	1·3	.....	1·3	
September	64	37	1·1	.....	1·1	

Average yearly total precipitation, 14·6 inches.

†Figures for Prince Albert not available. Rosthern figures substituted.

ALBERTA

TABLE SHOWING TEMPERATURE, PRECIPITATION AND SUNSHINE

Average figures given

MEDICINE HAT

Height above sea, 2,144 feet

Months	Temperature Deg. Fahr.		Precipitation in inches			Sunshine	
	Observations for 30 years		Observations for 30 years			Observations for 15 years	
	Average Highest	Average Lowest	Rain	Snow	Total	Hours	Hours possible duration
January	22	1	0·0	6·1	0·6	88	266
April	59	31	0·4	2·4	0·6	220	412
May	68	42	1·7	0·5	1·8	233	476
June	76	49	2·6	.....	2·6	268	487
July	83	54	1·7	.....	1·7	326	489
August	81	51	1·5	.....	1·5	284	445
September	70	43	0·9	0·4	0·9	196	377

Average yearly total precipitation, 12·8 inches.

CALGARY

Height above sea, 3,428 feet

Months	Observations for 30 years		Observations for 30 years			
January	21	1	0·1	4·9	0·5	No observations
April	53	27	0·3	4·6	0·8	
May	62	36	2·0	3·7	2·4	
June	69	43	3·1	0·5	3·2	
July	75	47	2·6	.....	2·6	
August	73	45	2·6	0·1	2·6	
September	64	37	1·0	2·1	1·2	

Average yearly total precipitation, 16·4 inches.

EDMONTON

Height above sea, 2,158 feet

Months	Observations for 30 years		Observations for 30 years			Observations for 10 years	
January	16	− 4	0·1	7·0	0·8	79	320
April	53	29	0·3	3·6	0·7	212	469
May	64	38	1·7	1·3	1·7	222	474
June	70	44	3·3	.....	3·3	242	483
July	74	49	3·6	.....	3·6	273	456
August	72	46	2·5	.....	2·5	256	437
September	63	38	1·2	1·7	1·4	184	375

Average yearly total precipitation, 17·7 inches.

GRANDE PRAIRIE

Height above sea, 1,350 feet.

Months	Observations for 9 years		Observations for 9 years			
January	12	− 6	0·0	15·8	1·6	
April	47	26	0·2	4·3	0·6	
May	58	33	1·4	6·0	2·0	
June	66	42	1·9	0·4	2·0	No observations
July	71	46	2·0	.....	2·0	
August	69	44	1·6	.....	1·6	
September	59	36	1·2	0·2	1·2	

Average yearly total precipitation, 17·0 inches.

PEACE RIVER

Height above sea, 1,225 feet

Months	Observations for 9 years		Observations for 9 years			
January	4	−17	0·0	15·5	1·6	
April	52	24	0·2	1·9	0·4	
May	66	36	1·4	0·6	1·5	
June	71	43	3·0	.....	3·0	No observations
July	76	47	2·2	.....	2·2	
August	72	45	1·8	.....	1·8	
September	64	33	1·1	0·2	1·2	

Average yearly total precipitation, 13·7 inches.

MANITOBA

TABLE SHOWING HAIL AND FROST FOR 1919, 1920 AND 1921, GROWING MONTHS ONLY

Days with Hail*

	Winnipeg			Minnedosa			Dauphin			The Pas		
Height above sea-level	760 feet			1,690 feet			957 feet			860 feet		
Months	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919	1920	1921
May	1	0	0	0	0	0	0	0	0	0	0	0
June	0	1	0	1	0	0	0	1	0	0	0	1
July	0	0	0	0	1	0	0	1	1	0	0	0
August	0	0	1	0	1	1	0	1	0	0	0	0
September	0	0	1	0	0	0	0	2	0	0	0	0
Days with Frost†												
May	6	4	9	5	5	8	10	6	9	7	no records	8
June	0	0	1	4	0	1	1	0	1	0		0
July	0	0	0	0	0	0	0	0	0	0		0
August	0	.....	0	0	1	0	0	0	0	0		0
September	3	0	0	3	1	1	5	1	0	5		4
Days below 29° Fahr. (Severe frost)												
May	2	2	7	3	2	8	8	3	8	3	no records	5
June	0	0	0	2	0	1	0	0	0	0		0
July	0	0	0	0	0	0	0	0	0	0		0
August	0	.....	0	0	1	0	0	0	0	0		0
September	1	0	0	1	0	0	3	0	0	2		0

SASKATCHEWAN

TABLE SHOWING HAIL AND FROST FOR 1919, 1920 AND 1921, GROWING MONTHS ONLY

Days with Hail*

	Qu'Appelle			Swift Current			Battleford			Prince Albert		
Height above sea level.	2,115 feet			2,392 feet			1,592 feet			1,450 feet		
Months	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919	1920	1921
May	0	0	1	1	0	0	0	0	0	0	0	0
June	0	0	0	0	1	1	0	0	0	0	0	0
July	1	0	0	0	1	3	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0
Days with Frost†												
May	8	4	8	8	2	7	8	2	5	8	7	8
June	0	0	1	2	2	0	2	0	1	1	1	1
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	2	1	0	0	0	0	0	0	0	0	0
September	4	3	3	4	2	4	4	2	3	5	2	2
Days below 29° Fahr. (Severe frost)												
May	3	1	4	1	0	3	5	1	0	4	2	1
June	0	0	1	1	0	0	1	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	3	1	0	3	2	1	2	0	0	1	1	0

ALBERTA

TABLE SHOWING HAIL AND FROST FOR 1919, 1920 AND 1921, GROWING MONTHS ONLY

Days with Hail*

	Medicine Hat			Edmonton			Peace River			McMurray		
Height above sea-level.	2,144 feet			2,158 feet			1,225 feet			804 feet		
Months	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919	1920	1921
May	0	1	0	0	2	0	0	0	0	no records	0	0
June	0	0	0	1	3	2	0	0	0		0	0
July	0	0	0	0	1	0	0	0	0		0	2
August	0	0	0	2	1	0	0	0	0		1	1
September	0	0	0	1	0	0	0	0	0		3	0
Days with Frost†												
May	3	3	2	7	9	5	12	6	4	14	15	11
June	0	1	0	1	3	0	1	2	0	4	6	2
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	2	1	0
September	3	2	3	5	6	11	5	10	7	7	8	16
Days below 29° Fahr. (Severe frost)												
May	1	0	1	5	0	2	8	5	2	5	8	5
June	0	0	0	0	1	0	1	0	0	0	6	1
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	1	1	0	3	1	4	3	3	4	3	2	11

*This does not necessarily mean 24 hours of hail but merely indicates days during which hail fell.
†Days in which temperature reached 32° Fahr. (freezing point of water) or lower.

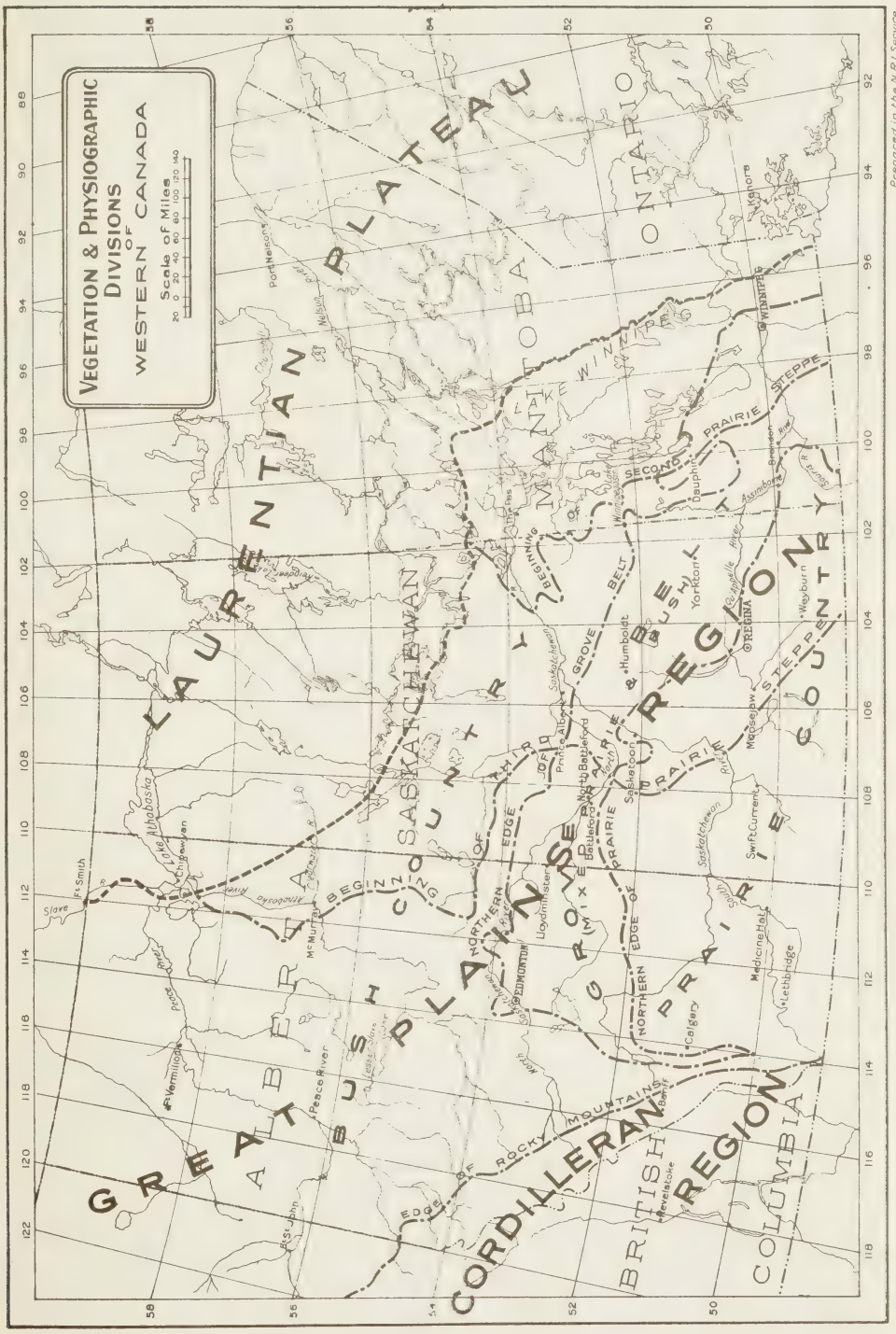
LANDS AND AGRICULTURE

Extending from the western boundary of Ontario to the Rocky mountains is a vast fertile area, the Great Western Plains of Canada. From a breadth of 800 miles at the international boundary this area gradually narrows towards the north as a result of the western extension of the Laurentian plateau. There are three steppes of different elevations in this great plain, rising from east to west, the lowest and most eastern including the Red river valley at an elevation of 700 to 800 feet above the sea. The range of hills in Manitoba running from the Pembina mountains on the south to the Porcupine and Pasquia hills on the north, marks the beginning of the second steppe which has an average elevation of 1,600 feet. The third and largest steppe includes most of Alberta, rising from 2,000 feet on the east to 4,000 feet as the foothills of the Rocky mountains are approached.

There are three well defined belts of vegetation in Western Canada. The southern part of the plains region is an area of treeless grassy prairies. It includes the semi-arid areas of southern Alberta and southwestern Saskatchewan, where climatic conditions have led to the development of irrigation on a large scale. The northern portions of the western provinces are covered with a forest of spruce, poplar, birch, tamrack and willow, the southern edge of the forest area running northwest from south of lake Winnipeg to the vicinity of Edmonton. Between the prairie and the bush country is a transition belt of mixed prairie and woodland, 50 to 125 miles in width, commonly called the grove or park belt. The striking difference between this belt in its natural state and the prairie belt to the south is its heavier vegetation. The grass is longer and coarser, scrub is common and there are alternating open and wooded areas. Parts of the Peace River district in northern Alberta have similar characteristics.

In Manitoba, Saskatchewan and Alberta, the public lands are under the control of the Dominion Government. The total area of the three provinces is 485,642,880 acres, of which it is estimated that nearly 170,000,000 acres can be utilized for agricultural purposes. At one time regarded as too cold and barren for agriculture, this territory has been settled only at a comparatively recent date, the first railway to open up the country being completed in 1885. With the delusion respecting climate and fertility swept away, with easy tillage due to the absence of forest to be laboriously cleared, with easy grades for railways, and with a free homestead policy to attract the pioneer, the settlement of western Canada advanced with wonderful rapidity. In 1891 the population of what is now Manitoba, Saskatchewan and Alberta was 219,305, in 1921 it was 1,956,082, almost an eight-fold increase in 30 years. The result has been the transformation of the prairies and the effects of their development have been felt in almost every phase of industrial and commercial activity throughout the Dominion. In 1922 the area under field crops in Manitoba was 6,758,200 acres, in Saskatchewan 19,833,200 acres, and in Alberta 10,005,600 acres, a total of 36,597,000 acres throughout the three provinces.

In all new agricultural countries the tendency is to develop those farming activities best suited to the area. The physical features, soil and climate of the prairie provinces make them particularly suited for grain growing, and the growing of cereal crops is, therefore, the dominant branch of the farming industry, the area under wheat, oats, barley, rye and flax in 1922 forming respectively 58·0, 23·4, 5·4, 5·3 and 1·5 per cent of the total area under field crops. Wheat is the most important crop, climatic conditions in the Canadian west being conducive to the growth of the finest grade of milling wheat in the world. The dry


VEGETATION & PHYSIOGRAPHIC DIVISIONS OF WESTERN CANADA
Scale of Miles
20 0 20 40 60 80 100 120 140
Prepared in the N.R.I. Service Dept. of the Interior
GREAT PLAINS REGION
ALBERTA PLATEAU
BUSH COUNTRY
GROVE BELT (MIXED PRAIRIE)
PARKLAND BELT
SECOND PRAIRIE STEPPE
BUSHY YORKTON REGION
STEPPE COUNTRY
LAURENTIAN PLATEAU
MANITOBA LAKE WINNIPEG
ONTARIO
CORDILLERAN REGION
BRITISH COLUMBIA
ROCKY MOUNTAINS
EDGE OF ROCKY MOUNTAINS
NORTHERN EDGE OF PRAIRIE
BEGINNING OF NORTHERN CONIFER
BEGINNING OF McMURRAY
Fort Smith
Slave River
Lake Athabaska
Chipewyan
Vermilion
Peace River
Fort St. John
Edmonton
Lloydminster
Battleford
Prince Albert
Saskatoon
Humboldt
Regina
Moose Jaw
Swift Current
Medicine Hat
Lethbridge
Calgary
Yorkton
Weyburn
Port Nelson
Winnipeg
Dauphin
Assiniboine River
Qu'Appelle River
Saskatchewan River
South Saskatchewan River
Athabaska River
Peace River
Slave River
Vermilion River
Battle River
Red Deer River
Bow River
Milk River
Assiniboine River
Qu'Appelle River
Saskatchewan River
Nelson River
Churchill River
Winnipeg River
Kenora
Lake Athabaska
Lake Manitoba
Lake Winnipeg
Lake of the Woods

climate and the short but intensive growing season—long hot days and short cool nights—favour the growth of a crop known the world over as "number 1 hard spring" or "Manitoba hard." Mixed with the softer grades of wheat in milling, it raises the standard of the finished product and consequently is in demand by other wheat producing and milling countries. The value of the wheat crop of the prairie provinces in 1922 constituted over one-fifth of the total agricultural production of Canada.

In parts of Saskatchewan and Alberta stock-raising is still carried on as a primary industry. The southern portion of these provinces seems particularly well suited for this purpose, and at one time was famous for its ranches, providing ample pasturage for all the horses, cattle and sheep that were raised on these prairie lands. The increasing value of the lands, the demand for their use for grain growing and the extension of cultivation in the west, have materially reduced the area available for ranching purposes. The increased number of farms carrying small herds more than maintains, however, the average live stock production. The Peace River district in Alberta and northern portions of Saskatchewan and Manitoba have large areas well adapted for grazing purposes.

It is only in recent years that the prairie provinces have taken seriously to dairying, but the industry has made wonderful progress, and the wide adoption of the manufacture of dairy products in Western Canada has been one of the most pronounced features of Canadian agriculture. The vast areas of Western Canada still unoccupied or still devoted entirely to grain growing are well adapted to the production of milk, and in all probability the greatest expansion of the Canadian dairy industry in future will take place in these provinces. A feature of the butter made on the prairies is its excellent keeping quality, a very important consideration now that there is a surplus for export. The fine quality of the dairy products of Manitoba, Saskatchewan and Alberta is also shown by their popularity in open competition. The entries of these provinces have been to the front in interprovincial and international exhibitions, repeatedly winning the leading prizes wherever shown.

The farmers of the prairie provinces still devote most of their attention to the growth of wheat, but it is altogether likely that as the problem of conserving the soil fertility becomes of more importance, the vast grain-growing areas of western Canada will turn more to mixed farming. The trend is already very apparent and agriculture in these provinces is now more and more finding its outlet in diversified farming and animal husbandry. Horticulture is also gaining ground, and apples, plums and small fruits are successfully grown in many parts of the country. Extensive and increasing assistance in the promotion of agriculture is rendered by the dominion and provincial departments of agriculture, conveying to the man on the farm by various means the facts essential to the successful prosecution of his calling.

The free homestead policy, whereby a qualified person may acquire a quarter-section of land by the performance of certain residence and improvement duties, still applies to the public lands in the prairie provinces except the southern portions of Saskatchewan and Alberta, but with the exception of the northern districts of the three provinces, suitable lands available for homestead entry within easy reach of railroads are practically exhausted. There are, however, tens of millions of acres of fertile lands lying idle within 10 and 15 miles of existing railways. These lands are privately owned and many of them can be purchased at reasonable prices. The Natural Resources Intelligence Service of the Department of the Interior, Ottawa, issues lists of such lands, giving brief particulars, including location, prices, terms and owners' names and addresses. These lists are available to prospective home-seekers and purchasers.

Though the great agricultural production of Western Canada suggests a vast expanse of farm lands, it must not be concluded that urban and social

facilities are lacking. Scattered over the face of the prairies are seventeen cities, the largest being Winnipeg with a population of 179,000. In addition there are 163 towns and 489 incorporated villages. Thorough and comprehensive school systems care for the important matter of education. Ready intercourse is provided by the Government-owned telephone systems. Ample provision is made for road allowances and the mileage of improved highways is being rapidly extended. With freedom of worship religious denominations are widely represented. Rural hospitals, municipally owned, and rural health nursing established along the most advanced lines, are proving of great benefit to agricultural settlers. The pleasures of rural life are furthered through the activities of the Agricultural Extension Services of the respective provinces. Through the organization of community clubs, competitions for boys and girls at agricultural fairs, the encouragement of school gardens, travelling libraries, lectures on various subjects, farm literature, and in many other ways the Agricultural Extension Services foster greater interest in agriculture and the social aspect of farm life.

—	Manitoba		Saskatchewan		Alberta		Man., Sask. and Alta.	
	—	Proportion of total for Canada	—	Proportion of total for Canada	—	Proportion of total for Canada	—	Proportion of total for Canada
		p.c.		p.c.		p.c.		p.c.
Total area acres	161,172,480	6·75	161,088,000	6·75	163,382,400	6·84	485,642,880	20·34
Land "	148,432,640	6·44	155,764,480	6·75	161,872,000	7·02	466,069,120	20·21
Water "	12,739,840	15·83	5,323,520	6·61	1,510,400	1·88	19,573,760	24·32
Population 1921	610,118	6·94	757,510	8·62	588,454	6·70	1,956,082	22·26
Urban	261,467	6·01	218,958	5·03	222,904	5·13	703,329	16·17
Rural	348,651	7·85	538,552	12·13	365,550	8·24	1,252,753	28·22
Arable land (estimated) acres	25,000,000	8·3	70,000,000	23·3	74,000,000	24·7	169,000,000	56·3
Railway mileage, Jan. 1922 miles	4,418	11·1	6,296	15·8	4,557	11·4	15,271	38·3
Elevators No.	706	18·0	2,226	56·7	919	23·4	3,851	98·1
Capacity bus.	24,394,100	10·5	77,181,320	33·3	38,962,000	16·8	140,537,420	60·6
Areas under field crop 1922 acres	6,758,200	11·8	19,833,200	34·7	10,005,600	17·5	36,597,000	64·0
Estimated gross agricultural wealth, 1922 $	657,269,000	9·7	1,555,652,000	23·0	773,174,000	11·4	2,986,095,000	44·1
Land $	355,468,000	11·1	863,961,000	27·0	439,460,000	13·7	1,658,889,000	51·8
Buildings $	74,440,000	7·2	121,703,000	11·7	66,113,000	6·4	262,256,000	25·3
Implements $	44,887,000	11·4	111,170,000	28·4	51,224,000	13·1	207,281,000	52·9
Livestock $	58,599,000	8·6	130,011,000	19·0	86,431,000	12·7	275,041,000	40·3
Poultry $	2,945,000	7·1	6,250,000	15·1	4,284,000	10·3	13,479,000	32·5
Animals on fur farms $	450,000	6·7	100,000	1·5	80,000	1·2	630,000	9·4
Agricultural production $	120,480,000	8·5	322,457,000	22·7	125,582,000	8·8	568,519,000	40·0
Estimated average annual agricultural revenue, 1918–22 $	161,451,000	9·2	319,827,000	18·2	171,800,000	9·7	653,078,000	37·1
Field crops $	133,426,000	10·7	284,493,000	22·7	130,627,000	10·4	548,546,000	43·8
Farm animals $	8,916,000	6·4	16,163,000	11·5	19,954,000	14·2	45,033,000	32·1
Wool $	271,000	3·9	289,000	4·1	680,000	9·8	1,240,000	17·8
Dairy products $	13,052,000	5·4	8,754,000	3·6	13,945,000	5·7	35,751,000	14·7
Fruits and vegetables $	1,900,000	3·4	1,400,000	2·5	1,500,000	2·7	4,800,000	8·6
Poultry and eggs $	3,852,000	8·2	8,728,000	18·6	5,094,000	10·8	17,674,000	37·6
Fur farming $	(1) 83,000	6·7	(1) 28,000	2·2	(2) 15,000	1·2	126,000	10·1

(1) Two years, 1921–1922.

(2) Three years, 1920-1921 1922.

DETAILED STATEMENT OF SURVEYED AREAS IN MANITOBA, SASKATCHEWAN AND ALBERTA, JANUARY 1, 1923

Surveyed Area	Manitoba	Saskatchewan	Alberta	Total
	Acres	Acres	Acres	Acres
Under homestead (including military homesteads)	8,269,400	27,616,100	18,278,600	54,164,100
Under pre-emption, purchased homesteads, sales, half-breed scrip, bounty grants, special grants, etc.	5,111,100	7,663,300	3,864,100	16,638,500
Granted to railway companies	3,566,997	15,177,063	13,120,014	31,864,074
Granted to Hudson's Bay Company	1,196,800	3,183,600	2,175,900	6,556,300
School land endowment (1-18 of area surveyed in sections)	1,637,700	3,942,000	3,755,700	9,335,400
Sold subject to reclamation by drainage	.....	267	34,083	34,350
Sold under irrigation system	.....	76,832	981,853	1,058,685
Under timber berths	872,600	740,900	1,445,200	3,058,700
Under grazing leases	131,700	2,898,700	2,850,200	5,880,600
Forest reserves and parks	2,386,700	5,964,300	16,802,300	25,153,300
Reserved for forestry purposes (inside surveyed tract)	746,300	1,430,000	1,677,500	3,853,800
Road allowances	977,132	1,467,500	1,287,200	3,731,832
Parish and river lots	505,211	84,010	118,564	707,785
Indian reserves	434,301	1,071,136	1,367,707	2,873,144
Indian reserves surrendered	87,560	410,365	302,495	800,420
Water-covered lands (inside surveyed tract)	4,260,500	1,911,200	2,302,200	8,473,900
Available for entry	5,516,800	5,390,700	15,400,400	26,307,900
Total surveyed area	35,700,801	79,027,973	85,764,016	200,492,790

ACREAGE AND PRODUCTION OF FIELD CROPS

	Manitoba		Saskatchewan		Alberta	
	Acreage	Production	Acreage	Production	Acreage	Production
		bush.		bush.		bush.
Wheat—						
1900	1,965,193	18,352,929	487,170	4,306,091	43,103	797,839
1905	2,417,253	47,626,586	1,376,281	31,799,198	147,835	3,035,843
1910	2,760,371	34,125,949	4,228,222	66,978,996	879,301	9,060,210
1915	2,800,424	69,337,000	8,929,260	224,312,000	2,138,031	66,538,000
1916	2,725,725	29,667,000	9,032,109	147,559,000	2,604,975	65,088,000
1917	2,448,860	41,039,700	8,273,250	117,921,300	2,897,300	52,992,100
1918	2,983,702	48,191,100	9,249,260	92,493,000	3,892,489	23,752,000
1919	2,880,301	40,975,300	10,587,363	89,994,000	4,282,503	34,575,000
1920	2,705,622	37,542,000	10,061,069	113,135,300	4,074,483	83,461,000
1921	3,501,217	39,054,000	13,556,708	188,000,000	5,123,404	53,044,000
1922	3,125,556	60,051,000	12,332,297	250,167,000	5,765,595	64,976,000
Oats—						
1900	573,848	10,592,365	141,517	2,270,057	118,025	3,791,259
1905	779,279	31,458,692	606,346	25,623,849	311,545	11,728,314
1910	1,209,173	30,378,379	1,888,359	58,922,791	783,072	16,099,223
1915	1,317,365	50,750,000	3,336,245	145,066,000	1,827,071	83,876,000
1916	1,443,599	48,439,000	3,791,807	163,278,000	2,124,081	102,199,000
1917	1,500,000	45,375,000	4,521,600	123,213,000	2,537,900	86,288,600
1918	1,714,894	54,473,500	4,988,499	107,253,000	2,651,548	60,323,000
1919	1,847,267	57,698,000	4,837,747	112,157,000	2,767,372	65,725,000
1920	1,873,954	57,657,000	5,106,822	141,549,000	3,089,700	115,091,000
1921	2,226,376	49,442,500	5,681,522	170,513,000	2,911,743	64,192,000
1922	1,851,608	74,433,000	5,098,104	179,708,000	1,614,500	35,519,000
Barley—						
1900	139,660	2,666,567	11,798	187,211	11,099	287,343
1905	249,218	7,544,150	40,732	1,196,419	80,900	2,231,186
1910	416,016	6,506,634	129,621	3,061,007	121,435	2,480,165
1915	567,080	16,658,000	299,993	9,523,000	304,009	9,822,000
1916	687,503	13,729,000	367,207	9,916,000	336,586	9,774,000
1917	708,000	15,930,000	669,900	14,067,900	472,100	10,386,200
1918	1,102,965	27,963,400	699,296	11,888,000	470,073	7,756,000
1919	893,947	17,149,400	492,586	8,971,000	414,212	10,562,000
1920	839,078	17,520,000	519,014	10,501,500	480,699	12,739,000
1921	1,043,144	19,681,600	497,730	13,343,000	568,191	11,657,000
1922	968,783	28,863,000	636,456	18,511,000	378,053	6,238,000

ACREAGE AND PRODUCTION OF FIELD CROPS—*Concluded.*

	Manitoba		Saskatchewan		Alberta	
	Acreage	Production	Acreage	Production	Acreage	Production
		bush.		bush.		bush.
Flax—						
1900	14,404	81,898	226	2,403	101	710
1905	9,205	110,040	35,664	486,578	943	11,623
1910	34,684	176,675	506,425	3,893,160	31,076	78,480
1915	14,505	120,000	395,254	5,255,000	48,000	670,000
1916	15,684	210,000	542,034	6,692,000	95,063	1,310,500
1917	16,300	146,700	753,700	4,710,600	139,800	978,600
1918	107,961	1,091,000	840,957	4,205,000	95,920	480,000
1919	57,379	520,300	929,945	4,490,000	80,690	222,000
1920	146,455	1,157,800	1,140,921	5,705,000	103,700	726,000
1921	61,689	544,700	426,849	3,230,000	28,434	171,000
1922	66,680	734,000	466,177	4,079,000	22,186	88,700
Rye—						
1900	937	7,085	1,291	12,483	1,048	17,649
1905	2,543	58,767	1,075	19,850	4,090	84,982
1910	2,738	29,205	754	11,639	6,672	109,006
1915	11,507	208,000	7,207	203,000	15,963	374,726
1916	30,050	557,000	22,759	548,000	17,975	440,000
1917	37,000	638,300	53,250	998,400	30,880	633,000
1918	240,000	3,935,700	123,500	1,420,000	47,877	826,000
1919	298,932	4,089,400	190,482	2,000,000	83,404	1,173,000
1920	148,602	2,318,600	172,449	2,535,000	160,960	3,420,000
1921	257,793	3,564,700	1,208,299	13,546,000	222,136	1,999,000
1922	421,603	7,078,000	900,931	16,164,000	603,583	6,187,000
Other Grains—						
1900						
1905						
1910	771	13,635	873	11,579	2,085	40,927
1915	659	22,000	2,897	68,100	2,530	91,200
1916	1,400	45,000	15,750	547,300	5,200	149,500
1917	1,400	43,400	42,105	1,308,900	25,878	651,100
1918	30,309	856,000	28,561	592,000	30,746	652,000
1919	36,021	840,400	28,690	876,500	28,293	978,900
1920	32,962	674,200	21,673	665,000	13,602	340,000
1921	21,331	359,400	26,583	756,500	12,509	286,000
1922	24,503	663,500	33,926	940,800	16,005	389,900
Potatoes and Roots—						
1900	16,766	2,123,447	6,529	784,224	4,480	711,762
1905	18,032	3,200,295	12,200	1,653,286	12,396	2,222,668
1910	28,218	3,362,513	25,036	3,092,776	22,498	2,811,119
1915	32,536	3,230,000	36,130	4,137,000	30,002	4,421,000
1916	35,105	5,161,000	48,610	7,729,000	30,916	5,258,000
1917	36,900	4,116,000	78,804	10,737,000	59,864	9,681,000
1918	54,910	10,819,800	69,543	9,154,200	56,753	5,476,800
1919	48,045	6,400,500	80,108	14,841,000	58,348	11,010,000
1920	44,404	4,486,000	64,263	10,006,000	55,300	10,357,500
1921	42,492	6,878,300	66,476	11,678,000	59,579	9,402,000
1922	43,428	7,554,300	64,266	8,632,700	51,791	6,263,700
Fodder Crops—		tons		tons		tons
1900	43,660	53,184	5,961	10,005	10,875	185,599
1905	117,988	175,069	19,724	28,089	56,326	888,775
1910	142,813	139,681	38,551	46,305	153,824	133,187
1915	99,740	115,000	29,610	44,300	205,312	285,400
1916	91,894	181,200	30,493	73,700	194,758	390,300
1917	89,200	131,700	285,433	416,200	528,894	798,800
1918	89,940	150,000	333,346	435,300	493,985	451,100
1919	282,426	527,300	283,633	381,400	455,729	524,000
1920	229,233	393,710	261,690	414,500	411,077	575,900
1921	267,644	518,100	310,316	731,300		1,710,776
1922	256,079	622,200	301,010	561,000	1,553,910	1,900,000

NUMBERS OF FARM LIVE STOCK AND POULTRY

Province and Year	Horses	Milch Cows	Other Cattle	Sheep	Swine	Poultry
Manitoba—						
1901	163,867	141,481	208,405	29,464	126,459	1,167,876
1906	215,819	170,143	350,969	28,975	200,509	.....
1911	280,374	155,328	280,240	37,322	188,416	2,585,903
1916	324,707	197,825	359,259	76,762	216,040	2,394,201
1917	324,175	202,177	357,870	80,588	175,013	.....
1918	384,772	225,659	521,240	136,782	284,596	2,354,023
1919	379,356	227,872	553,899	167,170	261,542	2,731,166
1920	356,628	221,785	536,189	156,716	212,542	3,373,500
1921	419,789	251,799	565,960	131,361	224,704	3,752,614
1922	374,632	252,245	488,495	111,964	235,214	3,612,108
Saskatchewan						
1901	83,461	56,634	212,145	73,097	27,753	297,344
1906	240,566	112,618	360,236	121,290	123,916	.....
1911	507,468	181,168	452,470	114,216	286,295	3,393,403
1916	834,189	322,767	690,256	124,237	530,727	4,828,727
1917	880,301	354,403	856,687	127,892	573,938	7,847,741
1918	990,009	352,989	926,342	134,177	521,240	8,000,369
1919	1,078,452	374,062	1,005,501	146,911	432,367	8,515,527
1920	939,805	354,507	969,555	160,918	321,900	6,607,140
1921	1,169,278	421,706	1,141,626	188,021	432,776	9,554,009
1922	1,143,502	456,006	1,146,780	191,937	563,069	8,455,950
Alberta—						
1901	92,661	46,101	276,859	87,104	46,069	251,799
1906	226,534	101,245	849,387	154,266	114,623	.....
1911	407,153	147,649	592,076	133,592	237,511	2,453,117
1916	629,462	277,324	882,766	294,690	603,554	3,172,777
1917	718,317	325,861	1,209,433	276,966	730,237	3,263,217
1918	791,246	328,702	1,362,880	332,179	601,534	3,022,333
1919	800,380	336,596	1,247,448	364,498	445,858	4,426,375
1920	741,851	305,607	1,050,334	383,424	286,556	2,399,855
1921	916,510	423,838	1,430,364	523,599	574,318	4,963,565
1922	863,316	392,037	1,261,005	260,366	623,188	5,935,295

PRODUCTION AND VALUE OF CREAMERY BUTTER AND FACTORY CHEESE

Manitoba

Year	Creameries	Cheese Factories	Combined Butter and Cheese Factories	Total Establishments	Creamery Butter		Factory Cheese	
	No.	No.	No.	No.	lb.	$	lb.	$
1900	26	40	3	69	1,557,010	292,247	1,289,413	124,025
1907	20	31	0	51	1,561,398	388,427	1,266,592	144,836
1910	21	20	1	42	2,050,487	511,972	694,713	81,403
1915	36	22	0	58	5,839,667	1,693,503	726,725	109,008
1916	36	21	0	57	6,574,510	2,038,109	880,728	158,931
1917	41	23	0	64	7,050,921	2,595,472	1,003,646	199,036
1918	40	18	1	59	8,436,962	3,897,476	657,585	143,281
1919	44	12	0	56	8,268,342	4,350,693	423,855	111,898
1920	53	4	0	57	7,578,549	4,282,731	116,229	31,611
1921	45	6	0	51	8,541,095	3,253,057	255,829	47,341

Saskatchewan

1900	4	1		5	143,645	29,362	6,000	868
1907	6	1		7	132,803	36,599	15,000	1,950
1910	25	2		27	1,548,696	381,809	26,730	3,396
1915	28	1		29	3,811,014	1,055,000	.....	.....
1916	32	.....	None	32	4,310,669	1,338,180	.....	.....
1917	31	.....		31	4,220,758	1,575,965	.....	.....
1918	38	1		39	5,009,014	2,221,403	13,573	3,257
1919	42	1		43	6,622,572	3,495,172	35,452	11,527
1920	46	1		47	6,638,656	3,727,140	28,367	7,790
1921	55	1		56	7,030,053	2,552,698	22,659	4,209

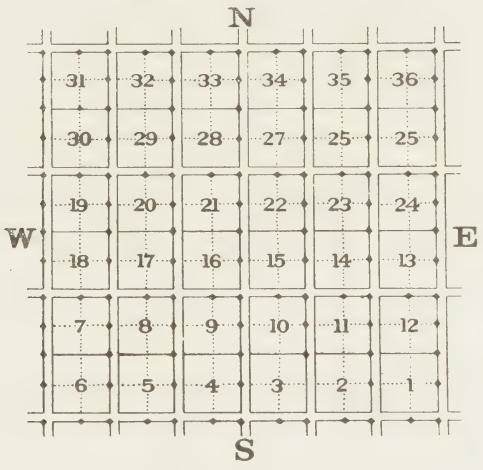
Alberta

1900	17	1	0	18	601,489	123,305	21,693	3,102
1907	45	8	0	53	1,507,697	362,782	197,911	24,468
1910	43	11	2	56	2,149,121	533,422	193,479	23,473
1915	49	5	8	62	7,544,148	2,021,448	381,632	68,441
1916	48	7	9	64	8,521,784	2,619,248	745,122	154,453
1917	53	7	13	73	8,943,971	3,414,541	1,274,905	280,185
1918	50	5	6	61	9,053,237	4,025,851	552,834	130,911
1919	48	5	5	58	11,822,890	6,132,733	520,530	145,158
1920	48	2	5	55	11,821,291	6,555,509	398,750	110,355
1921	40	5	5	50	13,048,493	4,543,007	930,660	200,478

System of Survey of Dominion Lands

Dominion Lands are laid off in square townships containing thirty-six sections of as nearly one mile square as the convergence of meridians permits. Such sections are bounded and numbered as shown in the township diagram below.

PLAN OF A TOWNSHIP



Monuments shown thus.....•

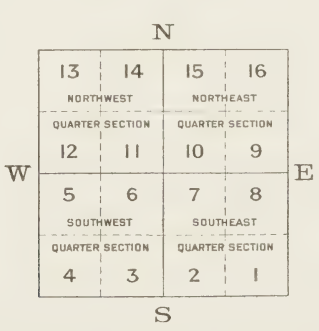
A section contains six hundred and forty acres. Each section is divided into four quarter-sections containing one hundred and sixty acres each.

Road allowances are provided as indicated by double lines on the above diagram, namely: running north and south between each section; running east and west, along the township lines and the lines two miles distant therefrom.

Townships are numbered consecutively from south to north. Each row of townships thus formed is given a range number. The ranges start from a Principal meridian and are numbered consecutively. The 1st meridian is a few miles west of Winnipeg. Ranges number from this meridian as a starting point, both eastward and westward. In regard to all other meridians, ranges number westward only.

It will be seen that when numbers for the township, range, and meridian are given, the exact location of the township is known.

PLAN OF A SECTION



Each section is deemed to be divided into forty-acre areas, known as legal subdivisions and numbered and bounded as in the diagram above.

Synopsis of Canadian Northwest Land Regulations

All surveyed agricultural Dominion lands in Manitoba, Saskatchewan, Alberta, and 3,500,000 acres in northern British Columbia, known as the Peace River Block, which are not disposed of and not reserved or occupied, are open to homestead entry except as follows: all lands south of the south boundary of township 16 in the provinces of Saskatchewan and Alberta are withdrawn from homesteading, and a temporary reservation is also being placed upon all the remaining lands in the Calgary, Lethbridge and Swift Current land districts, together with those portions of the Moose Jaw and Saskatoon districts lying west of the 3rd meridian, pending a general inspection of such lands. Islands are reserved from entry.

The sole head of a family, or any male over eighteen years old may homestead one quarter-section of available Dominion land in Manitoba, Saskatchewan, Alberta or the Peace River Block in British Columbia. Applicants need not be British subjects at the date of application for entry but are required to declare their intention of becoming British subjects. Evidence of naturalization must be furnished before patent is issued except in cases for which provision is made by law. Application for homestead entry may be made by a person eligible under the provisions of The Dominion Lands Act, either at the Land Agency for the district in which the land is situated, or at the office of a sub-agent authorized to transact business in the district. Entry by proxy may be made at any Dominion Lands Agency (but not sub-agency), on certain conditions. An entry does not include the mineral or water rights. An agent may reserve one available quarter-section as a homestead for a minor over seventeen years of age until he is eighteen.

The homesteading conditions to be fulfilled comprise: Six months' residence upon and cultivation of the land in each of three years. A homesteader may reside within nine miles of his homestead on a farm of at least eighty acres, on certain conditions. A habitable house is required, except where residence is performed in the vicinity. The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions. A homesteader is allowed six months from the date of his entry within which to perfect the same by taking possession of the land and beginning his residence duties. Any entry not so perfected within that period is liable to cancellation.

For further information regarding homesteading write to the Dominion Lands Branch, Department of the Interior, Ottawa.

Synopsis of Regulations Governing the Granting of Grazing and Hay Leases on Dominion Lands and of Hay Permits on Dominion and School Lands

Grazing leases of vacant Dominion lands unfit for agricultural purposes may be issued to British subjects for a period of ten years. The lands covered shall not be open to settlement during continuance of the lease. In the granting of leases, preference shall be given applicants who own adjoining lands. All applications for leases should be made to the Agent of Dominion Lands for the district on a form supplied by him for the purpose, and should be accompanied by the rental for the first six months on the tract applied for.

No person or company shall be permitted to obtain under lease by original grant more than 12,000 acres.

The lessee shall, within each of the three years from the date of the lease, place upon the tract of land leased not less than one-third of the whole number of stock which is required to be placed upon the leasehold, namely, one head

of cattle or five head of sheep for every thirty acres of land covered by the lease, and shall during the rest of its term, maintain stock thereon in that proportion, and at least 25 per cent of the stock shall be breeding stock.

The lessee shall pay an annual rental at the rate of two cents per acre for every acre covered by the lease, payable half-yearly in advance.

The lessee shall be entitled to the hay on his leasehold and he may cultivate any portion of his leasehold for the purpose of growing winter feed for his stock, but shall not have the right to dispose of any such feed or hay by barter or sale.

Permits to cut hay, on vacant Dominion or school lands, may be obtained annually. A permit fee of one dollar shall be charged.

Permits issued shall be subject to dues of twenty-five cents per ton for domestic use, by actual settlers, and one dollar per ton for hay cut by other than settlers.

Hay permits are issued to cover one quarter-section but more than one permit may be obtained by an applicant provided he has the necessary number of stock. Hay permits are issued on the basis of three tons of hay to each head of stock.

A lease to cut hay on unoccupied Dominion lands may be issued to a settler who owns at least ten head of stock for a term of five years, at an annual rental of fifty cents per acre. No person may lease more than forty acres.

Leases may be granted to the Provincial Governments of Manitoba, Saskatchewan and Alberta for community grazing purposes for a term of ten years at an annual rental of not more than two cents per acre.

More detailed information regarding the granting of grazing leases, also hay leases and permits on Dominion lands may be obtained from the Controller of the Timber and Grazing Lands Branch, Department of the Interior, Ottawa.

Grazing Permits on School Lands

School Lands comprise sections 11 and 29 in every surveyed township in Manitoba, Saskatchewan and Alberta, and have been set apart by Act of Parliament as an endowment for the purposes of education and comprise approximately one-eighteenth of the surveyed lands in these provinces.

Grazing permits may be issued on School Lands, available for the purpose, in the provinces of Manitoba, Saskatchewan and Alberta, for one year, or portion thereof, upon payment in advance at the rate of six cents per acre per annum and an office fee of one dollar. The permits shall, except in cases where issued for a portion of a year only, be operative from the first day of April of the year in which issued and shall expire on the thirty-first day of March following.

Applications to acquire grazing permits on School Lands must be filed with the Agent of Dominion Lands for the district in which the lands are situated, or with a sub-agent for such district, for transmission to the agent, on the form prescribed for the purpose and must be accompanied by rental and office fee as set forth above.

Priority of application shall, at the option of the minister, be based upon the date of receipt of such application, accompanied by the required rental, in the office of the Agent of Dominion Lands for the district in which the land is situated.

Grazing permittees shall, at the discretion of the minister, have prior right to renewal permits year after year until such time as the Minister shall see fit to dispose of the land by sale or otherwise, provided applications for such renewals are filed on the prescribed form with the Agent of Dominion Lands for the dis-

trict on or before the first day of February next preceding the termination of the permit, accompanied by the ensuing year's rental and office fee, otherwise the permittees' right to renewal shall lapse.

Holders of grazing permits shall, upon application to the Agent of Dominion Lands for the district and upon payment of an office fee of one dollar, be entitled to free permits to cut on the lands whatever hay they require for their own use, but not for barter or sale. The permittees may also acquire permits to cut hay from the land for the purpose of barter or sale upon payment to the Agent of Dominion Lands for the district of an office fee of one dollar and dues at the rate of one dollar per ton for the quantity of hay to be cut for the purpose.

Full particulars in regard to grazing permits on School Lands will be furnished upon application to the Secretary, Department of the Interior, at Ottawa, or to any Agent of Dominion Lands.

Agricultural Loans

Summary of Legislation Providing for Farm Loans and Rural Credits

MANITOBA

The Manitoba Farm Loans Act

This Act provides that persons residing or intending to reside on lands within the province may obtain through the Manitoba Farm Loans Association, on first mortgage security, loans up to fifty per cent of the appraised value of the property offered, but not exceeding $10,000. Loans extend over a period of thirty years at a rate of interest of 7 per cent per annum, repayment being made on an amortization basis by equal annual payments composed of principal and interest. Loans may be made for the purpose of acquiring or improving land, the erection of farm buildings, the purchase of live stock, the discharge of liabilities, or for any other purpose calculated to increase land productiveness. Application for loan should be made to the Secretary of the Manitoba Farm Loans Association, Winnipeg, Manitoba.

The Manitoba Rural Credits Act

The Manitoba Rural Credits Act provides for the organization of rural credit societies to enable individual shareholders to obtain short term loans for the purchase of seed, feed, implements, stock, the erection of silos, and for the carrying on of farming operations. To establish a rural credit society a minimum of thirty-five farmers must subscribe at least $100 each, of which 10 per cent must be paid up; the rural municipality and the province each subscribe one-half of this amount, also paying 10 per cent. Each society is managed by a board of nine directors, three of whom are elected by the shareholders, three appointed by the municipality, and three by the province. Interest is at the rate of 7 per cent per annum and all loans are repayable during the calendar year in which they are made, but are renewable at the directors' discretion.

The organization of a rural credit society is initiated by not less than fifteen farmers applying by petition to the provincial secretary for permission to be incorporated.

SASKATCHEWAN

The Saskatchewan Farm Loans Act

This Act authorizes the Saskatchewan Farm Loan Board to make loans to farmers for the acquisition, development or improvement of land, and for the discharge of liabilities previously incurred for such purposes. Loans are made on mortgage security and must not exceed 50 per cent of the Board's valuation of the property; interest at the rate of 6½ per cent per annum, and principal and interest are repayable in thirty years on the amortization plan. Application for loan should be made to the Saskatchewan Farm Loan Board, Regina.

The Live Stock Purchase Act

This Act provides for the purchase of live stock by the provincial government to be sold to agriculturists for cash, or partly cash and partly credit, in which latter case a lien is taken on the animals till they are paid for. Credit will be given for a term not exceeding three years and to the extent of not more than 75 per cent of the value of the animals. Interest at the rate of 6 per cent before maturity and 8 per cent thereafter will be charged on all accounts. Application for purchase should be made to the Live Stock Commissioner, Department of Agriculture, Regina.

ALBERTA

The Alberta Co-operative Credit Act

This Act authorizes the formation of co-operative credit societies for the purpose of lending money to farmers on joint municipal and government guarantee. To establish a society a minimum of 30 farmers must subscribe stock to the value of $3,000 of which 20 per cent must be paid up. Each society is managed by a board of eight directors, four of whom are elected by the subscribers, three appointed by the province, and one appointed by the municipality. Short term loans are made to members for the purchase of seed, feed, implements, stock, and for the carrying on of farming operations. The rate of interest is not fixed but must not exceed 7½ per cent per annum. The incorporation of a co-operative society is obtained by a petition signed by fifteen farmers who have subscribed stock to the value of $1,500 with 20 per cent paid in cash.

Synopsis of Soldier Settlement Act

The Soldier Settlement Act applies to ex-members of the Canadian Expeditionary Force who served overseas or who, on account of some disability due to service in Canada, have received or are receiving a pension or gratuity in lieu thereof; to widows of men who died on active service and who would have been eligible for the benefits of the act; to members of the Imperial or Allied Forces who lived in Canada prior to the war; and to Imperial or Dominion Forces who served outside of the country of their enlistment. In the case of the last named, however, they are required to gain experience on farms in Canada before they will be granted qualification certificates.

The Soldier Settlement Board may grant to eligible and qualified returned men assistance by way of loans to enable them to take up farming. There are three classes of loans:—

1. If land is purchased for the settler: a maximum of $4,500 for land purchase, $1,000 for permanent improvements, and $2,000 for stock and equipment.

The settler is required to pay in cash ten per cent of the cost price of his land and to have sufficient means to enable him to carry on until returns from his farm are forthcoming. In the case of Imperials or Allied Forces who were not resident in Canada at the outbreak of the war they will be required to pay down twenty per cent of the cost of land, stock and equipment.

2. If the settler takes up Dominion lands: $1,000 for improvements and $2,000 for stock and machinery.

The Act provides for the granting of a quarter-section (160 acres) as a soldier grant, and in addition the settler may exercise his civilian right to homestead another quarter-section.

3. If the settler already owns land: $3,500 to remove encumbrances, not exceeding 50 per cent of the value of the land, $1,000 for permanent improvements, and $2,000 for stock and equipment, the whole, however, not to exceed $5,000.

In the session of 1922 amendments were adopted by Parliament by which loans for all purposes will run for twenty-five years. Under the old act the stock and equipment loans were repayable in four or six annual instalments.

Parliament also granted certain interest exemptions to men who went on the land prior to October 1, 1921, as follows: 1919, four years' exemption; 1920, three years'; 1921, two years'. Those who hereafter take up land under the Board will not receive the benefit of interest exemption. The interest rate is 5 per cent.

For more detailed information regarding soldier settlement write to the Soldier Settlement Board, Ottawa.

IRRIGATION DEVELOPMENT

The cycle of dry years in southern Alberta and Saskatchewan, commencing in 1917 and apparently ending in 1921, is the longest continuous period of drouth that has been recorded in Canada. During this cycle the average annual precipitation was approximately 8 inches while for the preceding period of wet years from 1911 to 1916 the annual rainfall averaged over 15 inches. Irrigation is usually a necessity in most years if the annual rainfall averages less than 20 inches.

The present enthusiasm that prevails for irrigation schemes is in marked contrast to the indifference that was shown prior to 1917. Whole districts have organized and are organizing for co-operative effort wherever it is physically and economically feasible to get water on the land. As soon as the project has been favourably reported upon by the Dominion Reclamation Service, irrigation districts are organized under provincial laws and construction is usually undertaken as soon as assurance is given that the provincial government is willing to guarantee the bonds that are issued and secured by the lands within the organized district.

Alberta

The dry zone of southern Alberta lies approximately between the 4th and 5th meridians and extends north to townships 34. In this area there are about 23,000,000 acres, much of which, however, is unsuited for irrigation on account of the varying altitudes or general topography. Certain areas along the western boundary of this zone, especially in the foothills district, receive sufficient rainfall to make them suitable for grazing purposes. No calculation has ever been made to ascertain how much of this region could be irrigated for the reason that the water supply is the limiting factor. It is believed, however, that even with the fullest economical development of storage, there is not enough controllable water to irrigate more than 2,500,000 acres of the district—approximately 10 per cent of its total.

Saskatchewan

Chiefly on account of inadequate water supply but partly also because of climatic and topographical conditions there is little prospect of extensive large-scale irrigation development in Saskatchewan except in a small area to the south of the Cypress hills between Robsart and Vidora. A great many small projects mainly for irrigating hay meadows have already been constructed and many new applications for water rights are received each year.

Manitoba

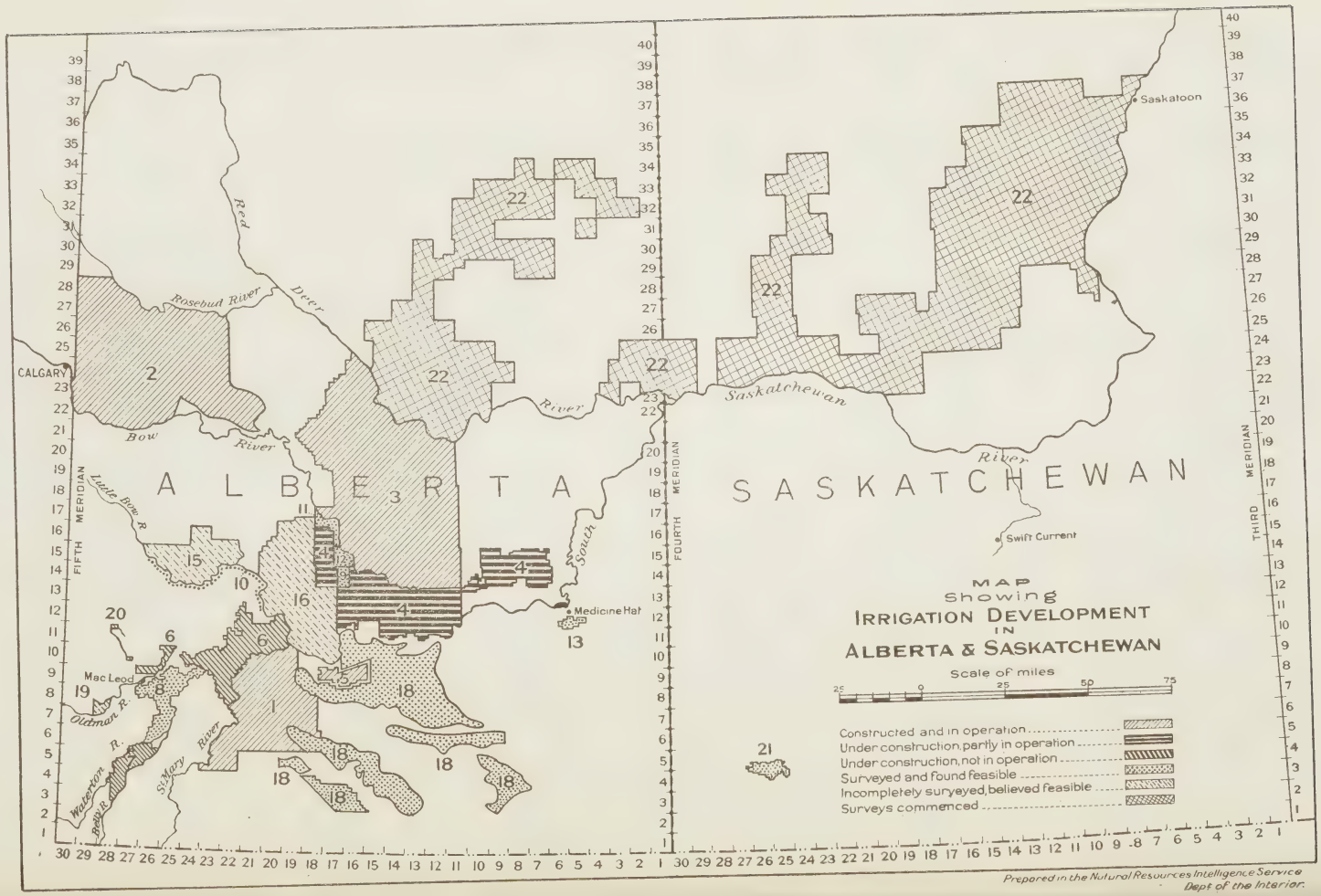
Climatic conditions throughout Manitoba are such that irrigation is not necessary and no appreciable development has taken place. Drainage rather than irrigation is a prime need in this province.

Some further co-operative development in both Alberta and Saskatchewan is to be expected in addition to that at present under way or contemplated. Though the area likely to be affected by this prospective development cannot be predicted with certainty, it will probably be in the neighbourhood of 250,000 acres. A large increase in the number of small private schemes is anticipated in the next few years; in fact developments of this nature are now taking place, 228 applications having been received during the year 1921. The area these schemes may embrace is about 85,000 acres.

The following statement and the map on page 28 are intended to show the extent of the actual proposed and prospective irrigation development in the Prairie Provinces.

IRRIGATION DEVELOPMENT IN WESTERN CANADA

——	No. on map (page28)	Project	Source of Supply	Area of Tract acres	Irrigable Area acres
Constructed and in operation...	2	C.P.R., West Section...	Bow river.....	1,145,336	218,980
	3	C.P.R., East Section...	Bow river.....	1,212,074	400,000
	1	Alta. Ry. and Irr. Co...	St. Mary river.....	434,509	130,000
	5	Taber Irr. Dist.....	St. Mary river.....	30,365	17,244
Under construction, partly in operation.....	4	Can. Land and Irr. Co..	Bow river.....	452,482	202,640
Under construction, not in operation.....	6	Lethbridge Nor. Irr. Dist.....	Oldman river.....	231,220	105,000
	7	United Irr. Dist.....	Belly river.....	61,195	23,000
Found by surveys to be feasible and economical.....	8	S. MacLeod Irr. Dist...	Waterton river.....	108,603	49,649
(District organized)	13	Medicine Hat Eastern Irr. Dist.....	Ross creek.....	4,800	2,900
	10	Little Bow Irr. Dist....	Highwood river.....	11,490	3,278
Found by surveys to be feasible.....	11	Eyremore Irr. Dist.....	Bow river.....	18,776	4,100
(District not organized)	12	River Bow Irr. Dist....	Bow river.....	16,688	5,792
	9	New West Irr. Dist.....	Bow river.....	13,015	7,629
	18	Lethbridge Southeastern Irr. Project.....	Waterton river.....	1,182,781	390,708
			Belly river.....		
			St. Mary river.....		
			Milk river.....		
	21	Robsart-Vidora Project.	Frenchman river.....	14,000	10,000
			Belanger creek.....		
			Davis creek.....		
			Sucker creek.....		
			Fairwell creek.....		
Incompletely surveyed, believed feasible	16	Retlaw-Lomond Irr. Dist.....	Bow river.....	418,630	70,000
			Oldman river.....		
	15	Champion Irr. Dist.....	Highwood river.....	184,860	50,000
	20	Granum Irr. Dist.....	Willow creek.....	.....	4,500
	19	Beaver Creek Project...	Beaver creek.....	.....	9,000
Surveys commenced.....	22	N. Sask. Irr. Project...	N. Saskatchewan river.....	3,538,760	1,778,784 (estimated)
			Clearwater river.....		
			Red Deer river.....		
			Battle river.....		
Small private schemes (483).....			.....	.....	105,397
Prospective co-operative development.....			.....	.....	250,000
Prospective development (private schemes).....			.....	.....	85,000
			Total.....	.....	3,923,691


MAP
Showing
IRRIGATION DEVELOPMENT
IN
ALBERTA & SASKATCHEWAN
Scale of miles
25 0 25 50 75
Constructed and in operation
Under construction, partly in operation
Under construction, not in operation
Surveyed and found feasible
Incompletely surveyed, believed feasible
Surveys commenced
ALBERTA
SASKATCHEWAN
CALGARY
Saskatoon
Swift Current
Medicine Hat
Mac Leod
Red Deer River
Rosebud River
Bow River
Little Bow R.
Oldman R.
Waterton R.
St. Mary River
South Saskatchewan River
FIFTH MERIDIAN
FOURTH MERIDIAN
THIRD MERIDIAN
Prepared in the Natural Resources Intelligence Service
Dept of the Interior

Synopsis of the Provisions of the Irrigation Act for the Guidance of Applicants for Water Rights

Preliminary Surveys.—In the majority of cases where water is to be diverted from any source, to be used for domestic or irrigation purposes, a preliminary survey is required to prove the scheme feasible before an application is filed for a water right. If any objection is raised by the owners of land, whose property it may be necessary to cross, the applicant may obtain a license from the Commissioner of Irrigation to make such preliminary survey.

Memorials.—Every applicant for a water right for any of the purposes authorized by the Irrigation Act is required to file a memorial containing information as to the character and location of the works to be constructed and the rights applied for. Blank forms of memorial may be obtained from the Commissioner of Irrigation, Calgary, Alberta.

Permission to Construct Ditches or Other Works Across Road Allowances or Surveyed Highways.—If the proposed scheme includes any crossings over road allowances or public highways the consent must be obtained of the Minister of Public Works for the province within which such works are situated before the works are constructed.

Permission to Construct Works Across Railway Lines.—In cases where the crossing of a railway line by an irrigation ditch or other works is required, permission must be had from the railway company or the Board of Railway Commissioners, as may be required.

Plan to Accompany Applications.—The memorial filed in connection with an application for a water right must be accompanied by both a general and a detail plan, showing the location and character of the proposed works. The general plan should show the location of the works to be constructed and the lands to be irrigated therefrom or which are affected thereby, as a record of the rights applied for, and the detail plan all the main details of the structures to be erected in connection with the proposed undertaking.

Full and specific instructions regarding the preparation of these plans will be forwarded upon application to the Commissioner of Irrigation, Calgary, Alberta.

Notices.—Section 19 of the Irrigation Act provides for the publication of notice of rights applied for. This notice will be prepared by the Commissioner of Irrigation as soon as the application has been approved, and will be forwarded to the applicant with the necessary instructions for publication in newspapers named by the commissioner.

Approval of Application and Authorization to Construct Works.—When the memorial and plans have been approved by the commissioner, the required notice of the application published, and permission has been given to construct the proposed works across road allowances, etc., authorization will be issued for the construction of the works as shown by the memorial and plans filed, and a period of time will be specified within which the works should be completed.

Right of Way for Proposed Ditches or Other Works.—All necessary right of way should be acquired by applicants for water rights before proceeding to construct any works across lands not owned or controlled by them.

To aid in irrigation development the Government grants free right of way over vacant dominion lands. If right of way is required over privately-owned lands, an agreement or easement granting right of way over such land should be secured in triplicate, and submitted to the Commissioner of Irrigation for registration.

Agreements to Use Water from Any Canal, Ditch or Reservoir.—Where it it desired to irrigate from any canal, ditch or reservoir, lands which are not the property of the applicant for the water right, an agreement with each individual owner for the irrigation of such lands must be filed with the Commissioner of Irrigation.

Application to Use Water Through Any Canal, Ditch or Reservoir not the Property of the Applicant.—When an applicant for a water right wishes to take water through another person's works, he must submit a memorial and plans in the usual manner; also an agreement, in quadruplicate, which shall bind the party owning or operating the original works to carry the applicant's water through these works from the point of intake to the point where the applicant's own works commence.

License to Divert and Use Water.—When irrigation works in connection with any application have been completed, and all questions regarding right of way, agreements to use water, etc., have been settled, an inspection of the works will be made by an officer of the Department, and if it is found that the works have been constructed in accordance with the memorial and plan filed, a water license will be issued to the applicant upon payment to the Commissioner of Irrigation of the regulation fee.

NOTE.—For fuller information apply to the Director of the Reclamation Service, Department of the Interior, Ottawa, or the Commissioner of Irrigation, Calgary, Alberta.

MINERALS

Though the Prairie Provinces are properly regarded as primarily agricultural, their yearly mineral production is important. In 1922 it was 15·6 per cent of the Dominion's total. Alberta, with her vast coal areas, yielded about 90 per cent of this, Manitoba 7·4 per cent, and Saskatchewan the remainder.

This mineral wealth, which is largely non-metallic, is admirably located from a domestic viewpoint. In the prairie section where there is an absence of forest fuel and available water-power, coal supplies the need, and the shortage of stone and timber for building purposes is compensated by an abundance of brick clay.

In the more northerly regions prospecting has been carried on only during the last few years, but has resulted in the discovery of gold, copper and lead in northern Manitoba, various minerals such as glass sand, soapstone, kaolin, mineral pigments and gold in northern Saskatchewan, and placer gold in northern Alberta. With improved transportation to these northern fields and more extensive prospecting these areas will yield an increasing share of the annual mineral production of the Prairie Provinces.

Bituminous Sands.

In the vicinity of McMurray, in northern Alberta, occur extensive beds of bituminous or tar sands, containing on an average 15 to 18 per cent bitumen. These beds extend along the Athabaska river for more than 100 miles, and vary from 25 to 200 feet in thickness. Much of the deposit, however, is of little economic value because of the excessive overburden. The bituminous sand has been successfully utilized in its native state for paving, but transportation costs prohibit any extensive use for this purpose. Several companies have leased claims in the McMurray area and are experimenting with the idea of extracting the bitumen and utilizing it for road-making or the production of gasoline, kerosene and lubricating oils by destructive distillation.

Building Stone.

There are two varieties of building stone of outstanding importance, namely, Tyndall limestone from the Tyndall district, north of Winnipeg in Manitoba, and Paskapoo sandstone, which is found in a wide belt bordering the Rockies in Alberta. Some granites and sandstones suitable for building purposes exist east and southeast of lake Winnipeg, and various schists and quartzites in Alberta may also be utilized. Granite and limestone are found in northern Saskatchewan, but in areas far removed from transportation facilities. Limestone, which may be used for road rubble, cement, pulp and paper manufacture, and for lime, is found conveniently situated in Manitoba and Alberta.

Coal.

Coal, by far the most valuable mineral found, is mined in all three provinces. Ranging from anthracite to bituminous and lignite, the output in 1922 comprised about 41 per cent of Canada's total coal production. Alberta, which contains approximately 15 per cent of the world's coal reserve, was first among the coal producing provinces of Canada for 1922, supplying about 95 per cent of the prairie provinces' output, divided as follows: anthracite, 1 per cent; bituminous, 47 per cent; and lignite, 52 per cent. The largest producing fields of the province are in the Lethbridge, Edmonton and Drumheller districts, where lignite is mined chiefly for domestic use, while the Brazeau, Yellow Head Pass, Mountain Pass and Crowsnest Pass fields produce excellent bituminous steam and coking

coals. No anthracite is at present mined at Bankhead. At December 31, 1921, there were 273 mines in operation in Alberta, of which 70 were of large size.

Practically the only coal found to date in Manitoba and Saskatchewan is lignite, most of which occurs in the latter province, which supplies the remaining 5 per cent of the coal production of the Prairie Provinces. Saskatchewan's chief output comes from the Estevan district, in the southeastern corner of the province. Lignite deposits are also found at various points along the Souris river, in the Willowbunch Wood Mountain district, on the South Saskatchewan, about 100 miles southeast of Saskatoon, and at numerous other localities in the province. Briquetting experiments are being conducted at Bienfait, which, it is hoped, will result in the greater utilization of these extensive lignite deposits.

In addition to the reported output numerous small mines and open cuts are operated for domestic consumption in all three provinces. A small tonnage of lignite is obtained in this way from the Turtle Mountain district, the only coal-producing area in Manitoba.

Copper.

Large deposits of this mineral are found in northern Manitoba in the Athapapuskow lake region. The Mandy property has already shipped 26,000 tons of high grade ore to the Trail smelter in British Columbia, and has an estimated reserve of 180,000 tons of 6 per cent copper ore. The Flin Flon claims have been shown by extensive diamond drilling to contain in the neighbourhood of 16,000,000 tons of low-grade copper-zinc-sulphide ore. The proper development of these ores will require, in addition to the usual mining machinery and equipment, a power development scheme, a smelter, and the construction of a railway to link up the area with The Pas. Copper claims have also been staked at lac la Ronge and Beaver lake in northern Saskatchewan.

Clays.

Clays and shales suitable for the manufacture of brick and clay products are quite general, being found at various points in all three provinces. Southern Saskatchewan is fortunate in also possessing the more valuable fire and earthenware clays in abundance. The earthenware clay, which is white, approaches the English ball clay when washed, and is found with fire-clays at such points as Eastend, Readlyn and Willows; fire-clay also occurs at Claybank. A large deposit of kaolin exists near Lake Wapawekka in northern Saskatchewan.

Gold.

Although the actual production of gold in the Prairie Provinces is very small, prospects for an increased yield are excellent. Small amounts of placer gold are recovered from some of the streams in the Peace River district in Alberta, and gold has been reported near Amisk and la Ronge lakes in Saskatchewan, but the most promising gold fields exist in northern and southeastern Manitoba. The copper ores of the Athapapuskow lake region and some claims in the Herb (Wekusko) lake area have already yielded gold in paying quantities, and development work is in progress at Elbow, Copper and Little Herb lakes in northern Manitoba. In the Rice lake, Beaver river and Long lake districts of eastern Manitoba much activity is reported, and in some cases stamp mills have already been installed. Gold claims have also been staked at such places as Wintering, Pipestone, Oxford, God's and Island lakes in Manitoba.

Gypsum.

The only gypsum deposit of present commercial importance is found in Manitoba, northwest of lake Manitoba at Gypsumville, where nearly 39,147 tons were mined during 1922. The beds here are very extensive, over twenty square miles of country underlaid with gypsum being held by the operating companies, thus ensuring a plentiful supply for many years to come.

Gypsum is also widely distributed throughout the northern plains of Alberta, large outcrops occurring on the Peace river near Peace Point and near the brine springs on Salt river.

Natural Gas.

Alberta's yield of natural gas, amounting to over 6,400,000 thousand cubic feet in 1922, is exceeded only by that of Ontario in provincial production. This practically completes the output for the Prairie Provinces, as Saskatchewan produces none and Manitoba a very limited quantity.

The four principal gas fields of Alberta are:—The Medicine Hat field, supplying Medicine Hat, Redcliffe and vicinity with gas for domestic and industrial uses; the Bow Island field, about 40 miles west of Medicine Hat, supplying Lethbridge, MacLeod, Calgary and many other southern Alberta towns; the Viking field, situated nearly 80 miles southeast of Edmonton, which is being developed to furnish gas for Edmonton and the surrounding district; and the Okotoks field which furnishes gas for Calgary. Producing wells are located at various other points in the province, and even in northern Alberta wells have been drilled yielding large quantities of gas, the most notable being that at the mouth of the Pelican river.

The extraction of gasoline from "wet" gas such as that obtained in the Okotoks field, has already been accomplished, as much as 1,200 gallons per day being recovered.

Petroleum.

Alberta is one of the three oil-producing provinces of Canada, the output in 1922 amounting to 6,058 barrels, valued at nearly $50,631. This production is obtained entirely from the Okotoks field in the Turner valley, southwest of Calgary.

There has been considerable drilling in various parts of Alberta, but with the exception of the wells at Okotoks, and the numerous strikes of natural gas, little success has attended these efforts. There is little doubt, however, that oil in large quantities exists, and many promising fields, such as the Peace river, Ranfurly, Monitor, Wainwright (including Fabyan and Irma), Medicine Hat, Pakowki, Coutts and Calgary districts are being drilled. The developments in the Sweet Grass district in Montana, close to the international boundary, where several producing wells have been brought in, have aroused much interest in the adjoining territory in Alberta.

No oil or natural gas has been discovered in Saskatchewan to date. Some prospecting for oil is going on in the Pasquia Hills area and in the Rush Lake district, near Swift Current.

In Manitoba the search for oil is confined to the Turnberry, Mafeking, Winnipegosis, Dauphin, Stony Mountain and Stonewall districts.

Salt.

Salt is widely distributed throughout the northern part of Alberta, the most notable occurrence being a saline spring near Fort Smith, which has supplied local demands for some years. Extensive beds of salt have also been discovered in the course of drilling operations near McMurray by the Provincial Government of Alberta.

In Saskatchewan small amounts are produced annually from a deposit near Senlac.

Several years ago salt was produced in Manitoba from brine springs occurring in the Dawson Bay area, west and south of lake Winnipegosis and near Mafeking.

Other Minerals.

Silver is present in the copper ores of the Mandy and Flin Flon groups, and silver-lead ore has been discovered at Little Herb lake in Manitoba.

In Alberta a deposit of limonite occurs on the Upper Peace river, toward the head of Halfway river, and promising deposits of sodium sulphate have been investigated near Minburn and Wainwright.

In Saskatchewan near Pipestone (Wapawekka) lake, some 50 miles east of lac la Ronge, occur deposits of soapstone and of a glass sand with a silica content of 98·6 per cent. Some hematite ore is found in the vicinity of Black bay, on lake Athabaska. Oil shales occur in the Pasquia hills and sodium sulphate and associated salts are found in the beds of partially dried-up lakes at or near Muskiki lake, Ceylon, Fusilier, Viceroy, Court, Dunkirk, North Battleford, Dana, and many other places.

A deposit of mica is reported in Manitoba about 15 miles east of lac du Bonnet, near the nickel-copper claims two miles east of Oiseau lake. An occurrence of tungsten-molybdenum ore is reported in the Falcon Lake district, and silica is found north of Swan river and near Black island, while pure quartzite has been observed 125 miles northwest of Winnipeg. Large areas of shales carrying small quantities of oil are found along the escarpment of the Pembina, Riding, Duck and Porcupine mountains.

Synopsis of Regulations Governing the Granting of Mineral Rights

Alkali Mining.—Dominion lands containing natural accumulations of soluable mineral salts and associated marls may be leased by the minister at an annual rental of twenty-five cents an acre. The term of the lease shall be twenty years, renewable for a further term of twenty years. Not more than 1,920 acres shall be leased to one applicant. A fee of ten dollars and the rental for the first year shall accompany each application for a lease. A royalty of twelve and a half cents per ton on solid products and two cents per gallon on salts in solution shall be charged, with certain reservations, on all raw or refined products shipped.

Coal.—Coal mining rights may be leased for a period of twenty-one years, renewable for a further period of twenty-one years, at an annual rental of one dollar an acre. Not more than 2,560 acres shall be leased to one applicant. A royalty at the rate of five cents per ton shall be collected on the merchantable coal mined.

A fee of five dollars shall accompany each application for a lease.

Coal mining rights, for domestic purposes but not for sale, may be acquired at an annual rental of five dollars. This permit may be renewed from year to year. Not more than one acre shall be disposed of to one applicant. A royalty of twenty-five cents shall be collected on each ton of merchantable coal mined.

Limestone, Granite, Slate, Marble, Gypsum, Marl, Gravel, Sand, Clay or any Building Stone.—Dominion lands containing these materials may be leased by the minister at an annual rental of one dollar per acre for the purpose of quarrying out and removing therefrom stone or other material mentioned herein.

The term of the lease shall be twenty-one years, renewable for a further period of twenty-one years.

The maximum area of the quarrying location shall be forty acres, and no person shall be allowed to lease more than one location.

Application for a location comprising surveyed land shall be filed by the locator in person with the Agent of Dominion Lands for the district in which the location is situated. In unsurveyed territory location is to be staked out.

A fee of five dollars shall accompany each application for a lease.

Clay locations are leased upon the condition that a plant suitable for the manufacture of brick or other clay products shall be erected within two years from the date of the lease, and, further, that in each year of the term of the lease after the second year there shall be produced ready for shipment not less than one hundred thousand bricks or their equivalent in some other form.

Petroleum and Natural Gas.—The petroleum and natural gas rights, which are the property of the Crown, may be leased to applicants at a rental of fifty cents per acre for the first year, and for each subsequent year at the rate of one dollar an acre. The term of lease shall be twenty-one years, renewable for a further term of twenty-one years. The maximum area of a location shall be 1,920 acres.

Provision is made for the installation of machinery within fifteen months, and if machinery is installed the minister may grant an extension of time to pay rental. Expenditures incurred in boring operations, exclusive of the cost of machinery and casing, may be accepted in lieu of rental. A number of leaseholds, comprising not more than twenty thousand acres, not separated by a greater distance than two miles, may be grouped and expenditures on one leasehold accepted in lieu of rental for all leases in the group.

Application for a lease shall be made by the applicant in person to the Agent of Dominion Lands for the district in which the rights applied for are situated, or to a sub-agent for such district for transmission to the agent. In case the location is in unsurveyed territory it shall be staked out by the applicant in person.

A fee of five dollars and the rental for the first year shall accompany each application for a lease.

Placer Mining.—Any person over eighteen years of age may enter for mining purposes, locate, prospect and mine for minerals upon any lands the right to which entry, prospecting and mining is vested or reserved to the Crown with certain exceptions.

An application for a grant of a claim shall be filed with the mining recorder within ten days after the location thereof, if the claim is located within ten miles of the mining recorder's office. One extra day shall be allotted for every additional ten miles, or fraction thereof. The fee for recording a claim is ten dollars.

Claims are designated as creek, river, or inland, all of which shall be as nearly rectangular as possible. A creek claim shall not exceed five hundred feet in length along the stream and one thousand feet in width on each side of it, and a river claim, which shall only cover one bank, may have an extreme length of five hundred feet along the river and a width of one thousand feet. An inland claim shall not exceed five hundred by one thousand feet. A person or party locating the first claim on any creek, river, hill, bench, bar, or plain shall be entitled to a claim or claims respectively, as follows:—

One locator, one claim 1,500 feet long; two locators, each one claim 1,250 feet long; more than two locators, two claims of 1,000 feet each and ordinary claims for the remainder of the party.

If any person satisfies the recorder that he is about to undertake a bona fide prospecting trip and files the power of attorney from not more than two persons authorizing him to stake for them in consideration of their having enabled him to undertake the trip, he may stake one claim of ordinary size in the name of

each such person within the valley or basin of any creek or river bench upon which he makes a discovery. This last-mentioned rule applies also in the staking of quartz claims.

Quartz Mining.—Any person having discovered mineral in place may locate a claim 1,500 by 1,500 feet by marking out the same with three legal posts, one at each end of the location line, and a third at the spot where the mineral in place has been discovered. The two location posts must have the name of the claim, a description of the ground, date of location, and locator's full name written legibly upon them. The discovery post shall be marked "Discovery Post," and No. 1 post marked "Initial Post."

The claim shall be recorded within fifteen days if located within ten mile of a mining recorder's office; one additional day is allowed for every additional ten miles or fraction thereof. The fee for recording a claim is ten dollars.

At least one hundred dollars must be expended on the claim each year or paid to the Mining Recorder in lieu thereof. When at least five hundred dollars have been expended or paid, the locator may, upon having a survey made, and upon complying with other requirements, lease the mineral rights. Permission may be granted to group any number of adjoining claims up to eight in number for representation work, upon taking out a certificate of partnership before the commencement of the work. (See also under placer mining.)

There are also regulations governing the issue of leases to dredge for minerals in the beds of the rivers; the leasing of deposits of potash on Dominion lands; the granting of permits to remove sandstone and gravel from beds of rivers and lakes; and regulations relating to bar diggings on the North Saskatchewan river.

NOTES.—(1) All rentals must be paid yearly in advance. Fees accompanying an application for a lease will be returned only if the rights applied for are not available.
(2) For petroleum and natural gas regulations in the Yukon Territories write the Northwest Territories and Yukon Branch.
(3) For other information regarding the various acts covered in the above synopses write the Mining Lands Branch, Department of the Interior, Ottawa.

MINERAL AREAS AND QUARRY LANDS SOLD UP TO MARCH 31, 1922, AND AREAS HELD UNDER MINING LEASES AT THAT DATE IN THE PROVINCES OF MANITOBA, SASKATCHEWAN AND ALBERTA

Sold or Leased	Manitoba	Saskatchewan	Alberta
	acres	acres	acres
Coal lands sold	Nil	7,369	241,217
Mining lands other than coal sold	9,122	574	19,702
Coal lands leased	40	7,626	332,122
Quarry lands leased	2,682	846	4,145
Petroleum and natural gas lands leased	42,673	141,657	1,681,006
Tar sands lands leased	Nil	Nil	3,963
Quartz mining lands leased	3,750	2,076	Nil
Potash lands leased	Nil	80	1,920
Alkali lands leased	Nil	1,275	1,991

MINERAL PRODUCTION OF ALBERTA, SASKATCHEWAN AND MANITOBA FOR 1922

	Unit of measure	Alberta		Saskatchewan		Manitoba	
		Quantity	Value	Quantity	Value	Quantity	Value
			$		$		$
Common brick	No.	15,877,564	190,228	2,153,310	27,058	9,944,977	166,023
Moulded and Ornamental brick	"	.....	.....	75,900	1,518	.....	.....
Pressed brick	"	2,736,000	45,759	1,101,000	41,557	70,715	1,768
Fire-brick	"	.....	.....	396,100	17,010	.....	.....
Hollow building blocks	"	706,616	40,050	95,000	950	860,000	15,310
Fireproofing and hollow porous blocks	Tons	8,343	76,229	.....	.....	1,875	27,639
Tapestry bricks	No.	251,450	6,286	.....	.....	.....	.....
Drain tile	"	55,650	3,480	85,000	6,200	.....	.....
Interlocking tile	"	.....	.....	400,000	36,600	.....	.....
Pottery	Tons	8,075	135,502	.....	.....	.....	.....
Sewer pipe	"	5,446	170,229	.....	.....	.....	.....
Fireclay	.....	.....	32,300	417	3,811	.....	.....
Cement	Brls.	358,209	838,208	.....	.....	429,352	1,126,137
Coal	Tons	5,965,849	24,367,910	382,379	801,923	.....	.....
Gold	Oz.	.....	.....	.....	.....	156	3,225
Lime	Bush.	130,627	71,323	.....	.....	382,184	163,799
Natural gas	M cu. ft.	5,867,459	1,622,105	.....	.....	200	60
Petroleum	Brls.	10,302	100,630	.....	.....	.....	.....
Sand and gravel	Yds.	844,416	229,091	685,144	306,734	479,279	207,414
Sodium sulphate	Tons	.....	.....	419	13,930	.....	.....
Silver	Oz.	.....	.....	.....	.....	20	14
Stone	Tons	554	7,300	.....	.....	34,359	106,638
Gypsum	"	.....	.....	.....	.....	34,072	440,914
Total	.....	.....	27,936,635	.....	1,257,291	.....	2,258,941

Map showing
PRINCIPAL MINERALS
of
MANITOBA SASKATCHEWAN
and
ALBERTA
Scale of Miles
LEGEND
In operation
Deposits
Coal Areas
NOTE:- for possible petroleum areas see text
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
BRITISH COLUMBIA
Lake Winnipeg
Lake Manitoba
Lake Winnipegosis
Hudson Bay
WINNIPEG
REGINA
EDMONTON
CALGARY
Prepared in the Natural Resources Intelligence Service
Department of the Interior

FORESTS

Though it may seem like a paradox to refer to the forests of the Prairie Provinces, the wooded sections in each province are nevertheless very extensive, actually covering in the case of Manitoba almost 70 per cent of the total area of the province.

Recent estimates of the commercial timber stands of the three provinces range from eight to eleven million acres and the commercial saw timber from thirty-three to forty-two billion board feet. This estimate neglects much of the northern area, with its more or less scattered scrubby growth, an area, however, which must not be underestimated in value, for it is both a potential source of small timber and pulpwood for the future, and a cover for game and fur-bearing animals.

The principal merchantable species include spruce, poplar, jackpine, tamarack, birch and balsam, while other species such as lodgepole pine, willow, cottonwood, ash, elm, maple, and oak are also found in varying numbers. Domestic consumption accounts for nearly all the production of the lumber mills which are located at central points throughout the timber regions in all three provinces. In 1921 there were 36 sawmills operating in Alberta, 16 in Saskatchewan and 27 in Manitoba.

Forest reserves are maintained in the Prairie Provinces to the extent of 18,894 square miles in Alberta, 9,303 in Saskatchewan and 3,729 in Manitoba. These reserves are still being added to and changed as careful surveys demonstrate the need. The policy of the Forestry Branch of the Department of the Interior has been to include in the forest reserves areas unfit for agriculture, but capable of being developed from waste areas to productive ones by reforestation methods, and to release land which is better suited for agriculture than tree growing. The reserves have been established, not with the idea of keeping the timber and other resources within them from use, but to supply, for all time, the largest quantity of the best timber that can be produced. A certain amount of fuel and building logs are given the nearby settlers, and permits are granted, on payment of a nominal fee, to cut timber for domestic, community and various other uses. Stands of fire-killed or over-mature timber are also sold to expedite the reforestation of the area concerned. The open spaces are leased to the settlers for grazing purposes, and the utilization of the reserves for camping, fishing and recreation purposes is encouraged.

The Forestry Branch maintains fire patrols in the reserves and on the timbered areas outside them; much good work is being done by the fire rangers in educating the campers, hunters and trappers to exercise care with their campfires, and in forcing timber cutters to clear up their slash. Every effort is being made to reduce the forest fires which every year take such toll of valuable timber; lookout towers are located at various points to assist the rangers in the early location of fires and areoplane patrols have recently been established which have proved of great value not only in combating forest fires but in various timber surveys and photographic work.

The tree planting division of the Dominion Forestry Branch with headquarters and chief nursery at Indian Head, Saskatchewan, and a subsidiary nursery at Sutherland, near Saskatoon, is doing splendid service in fostering prairie tree planting. Expert advice as well as tree seed, seedlings and transplants are supplied, with the result that many ranches have been beautified, much soil drifting prevented, valuable wind breaks established to protect both crops and live stock, and work of reforesting the forest reserves advanced.

It is probable that domestic markets will continue largely to absorb the products of the lumber mills of the Prairie Provinces, but on the other hand the vast supplies of pulpwood will doubtless be utilized in the near future to swell the total of Canadian exports of pulp and paper.

Timber lands in the Prairie Provinces are administered as follows: The forest reserves are controlled by the Forestry Branch, Department of the Interior; the timber on Dominion lands, excepting that located in parks and forest reserves but including timber limits leased before the reserves were established, are administered by the Timber and Grazing Lands Branch, Department of the Interior, while forests in Dominion parks are administered by the Canadian National Parks Branch, Department of the Interior.

Alberta

Alberta's timber wealth is found chiefly in the mountain and foothill country of the southwest, the broken head-water country of the Alberta rivers, and the northern half of the province.

The principal timber producing areas now available are found in the Rocky Mountains reserve. The northern regions are wooded, some good timber being found bordering the lakes, but due to transportation difficulties most of it is at present inaccessible; some lumber, however, is cut for local needs in the Peace River district.

Spruce provides the greater proportion of the annual cut to which smaller amounts of lodgepole pine, jack pine, balsam fir, poplar, tamarack and white birch contribute.

There are four forest reserves in Alberta, comprising an area of 18,894 square miles; Rocky Mountain, 13,730; Lesser Slave, 5,023; Cypress Hills No. 1, 81; and Cooking lake, 60. The Rocky Mountains reserve is divided, for administrative purposes, into four units, namely, Crow's Nest, Brazeau, Clearwater, and Athabaska.

As in the other provinces forest fires have wreaked terrible havoc among Alberta's forests, destroying much valuable timber. However, with improved methods of fire control, including the use of aeroplanes, and wise administration, the forests of Alberta will realize a large annual revenue.

Saskatchewan

About one-third of the province consists of wooded areas, only a small proportion of which is composed of commercial timber. This timber is largely contained in a belt stretching across the central part of the province, bounded on the north by the Churchill river and extending southerly to Prince Albert, on the Saskatchewan river. From Prince Albert it extends southeast, reaching below the river to the eastern boundary of the province, while the western section barely reaches the Saskatchewan. The northern part of the province is also wooded, but with the exception of some good timber in the valley of the Clearwater river and near the shores of lake Athabaska the forest growth is small and inferior. Estimates of the size of the merchantable timber stands range all the way from one to three million acres.

Saskatchewan ranks second in the lumber production of the Prairie Provinces, the centre of the industry being at Prince Albert. The cut is composed largely of spruce, the remainder being tamarack, poplar and jack pine. Other varieties found in Saskatchewan are balsam and white birch. Large reserves of pulpwood are available in this province, which are not being utilized at present.

There are 17 forest reserves in the province with a total area of 9,303 square miles, distributed as follows, areas in each case being in square miles: Porcupine No. 2, 2,870; Pasquia, 2,615; Big River, 1,342; Sturgeon, 729; Fort à la Corne,

513; Manito, 180; Pines, 165; Moose Mountain, 156; Nisbet, 149; Elbow, 119; Beaver Hills, 99; Cypress Hills No. 2, 98; Keppel, 86; Duck Mountain No. 2, 81; Dundurn, 63; Seward, 31; and Steep Creek, 7.

Manitoba

Of Manitoba's total area nearly three-quarters is wooded, the only parts of the province not bearing extensive forest growth being the southern prairie section and the extreme northern parts. Even in the southern districts are found some scattered clumps of trees and two forest reserves offer promise of more abundant timber for this sector. North of the prairies the forests are general, the best timber being found in the river valleys, on the islands, high plateaus and hilly regions, and around the shores of the lakes. The timber in the area tapped by the Hudson Bay railway is scattered and has been terribly depleted by the ravages of forest fires. In fact, nearly all the forests of Manitoba have suffered from this scourge, but in most places a second growth is flourishing. From The Pas, north, very little saw timber is found, although large quantities of mine timbers, ties and pulpwood are available. The extreme northern section supports a sparse stunted growth suitable for firewood.

Manitoba possesses large pulpwood resources, several areas presenting favourable conditions including abundance of water-power for the manufacture of pulp and paper. Among these may be mentioned the district between Lac du Bonnet and Black river, the one in the vicinity of Grand Rapids on the Saskatchewan river and the section along the line of the Hudson Bay railway from The Pas to Wintering lake. These areas will doubtless be called on to supply their share of Canada's pulp production in the future.

The forest flora of this province is varied. In the southern sections, oak, ash, poplar, elm, basswood, and maple are found while in the more northerly regions spruce, jack pine, tamarack, balsam, birch and poplar predominate.

Manitoba has first place in the lumber production of the Prairie Provinces, her output consisting of spruce, jack pine, poplar, birch, tamarack and balsam. Some of this production, however, should be credited to Saskatchewan, as much of the timber cut at The Pas is obtained from the Carrot and Sipanok river valleys in Saskatchewan.

Manitoba's five forest reserves cover an area of approximately 3,729 square miles. They are enumerated below, all areas being given in square miles. Duck Mountain, 1,462; Riding Mountain, 1,159; Porcupine No. 1, 775; Spruce Woods, 224; Turtle Mountain, 109.

Synopsis of Regulations Governing the Granting of Timber Berths in the Prairie Provinces

Timber berths shall be disposed of by public auction at the office of the Dominion Timber Agent for the district in which the berths are situated.

Before any parcel of timber is offered for sale it shall be surveyed by a duly qualified Dominion Land Surveyor into berths of an area not exceeding twenty-five square miles.

No berth shall be disposed of until notice of the sale has been given for a period of not less than sixty days in a newspaper published in the district in which the berth is located and also in a newspaper having a general circulation in the province.

Purchases shall be paid part in cash and balance covered by notes bearing interest at rate of 6 per cent per annum.

The licensee shall be entitled to a renewal of his license from year to year subject to the regulations in force at the time renewal is made, while there is on

the berth a sufficient quantity of merchantable timber as described in the license, and provided the terms and conditions of the license, and the provisions of the Dominion Lands Act, and regulations have been fulfilled.

The licensee shall pay an annual ground rent of ten dollars per square mile, and one-half of the cost of fire protection for his berth.

Timber for Homesteaders.—Any occupant of a homestead quarter-section having no suitable timber of his own and who had not obtained a free allowance of timber from Dominion lands may, providing application is made within five years of date of his homestead entry, obtain a free permit to cut a stated quantity of building timber, fencing timber or any fuel such as he may require for use on the land he owns and occupies. If he requires a further quantity for the purpose mentioned he must pay the specified dues.

Permit berths are granted covering one square mile under certain conditions contained in section 41 of the Timber Regulations.

For more detailed information regarding the granting of the right to cut timber on Dominion lands write to the Controller of the Timber and Grazing Lands Branch, Department of the Interior, Ottawa, or to the local Crown Timber Agent.

Synopsis of Regulations Governing the Granting of Pulpwood Berths

Pulpwood berths shall be disposed of by tender at the office of the Crown Timber Agent for the district, after having been advertised for not less than ninety days in at least two newspapers having a general circulation in the province in which the berth is located.

The Minister shall decide the area of the berth and whether a survey of the boundaries may be necessary.

Pulpwood dues shall be paid at the rate of 60 cents per cord.

The tenderer shall be required to deposit with his tender a marked cheque drawn on a chartered bank of Canada, payable to the Deputy Minister of the Interior, for a certain amount which shall be forfeited in the event of his not entering into agreement to carry out the conditions attached.

The licensee shall pay an annual rental at the rate of $1 per square mile, due in advance on the 1st May. The licensee shall also pay one-half the cost of fire-protecting his berth.

For further detailed information regarding the granting of the right to cut pulpwood on Dominion lands write to the Controller of the Timber and Grazing Lands Branch, Department of the Interior, Ottawa, or to the local Crown Timber Agent.

ESTIMATED TOTAL FOREST RESOURCES OF THE PRAIRIE PROVINCES

(All figures in millions of feet, B.M.)

	Saw Material			Small Material			Totals		
	Soft-wood	Poplar and Birch	Total	Soft-wood	Poplar and Birch	Total	Soft-wood	Poplar and Birch	All Species
Manitoba	3,450	3,000	6,450	23,550	14,500	38,050	27,000	17,500	44,500
Saskatchewan	3,950	4,000	7,950	52,350	22,500	74,850	56,300	26,500	82,800
Alberta	11,200	7,000	18,200	47,300	34,500	81,800	58,500	41,500	100,000
Total Prairie Provinces	18,600	14,000	32,600	123,200	71,500	194,700	141,800	85,500	227,300

PRAIRIE PROVINCE LUMBER CUT 1920-21—KINDS OF WOOD, QUANTITY AND VALUE

Kind of Wood		Manitoba		Saskatchewan		Alberta	
		1920	1921	1920	1921	1920	1921
Spruce	M feet	56,110	60,423	53,268	10,346	35,529	23,114
	Value $	1,981,396	1,369,884	2,034,524	259,455	1,273,869	628,795
Balsam fir	M feet	10	.....	.....	.....	875	.....
	Value $	350	.....	.....	.....	27,000	.....
Tamarack	M feet	260	278	628	400	4	21
	Value $	10,140	5,950	23,120	10,000	120	550
Jack pine	M feet	577	69	396	55	4,092	2,523
	Value $	17,530	1,264	13,907	1,347	153,622	73,999
Birch	M feet	286	.....	.....	.....	.....	.....
	Value $	12,900	.....	.....	.....	.....	.....
Poplar	M feet	1,176	941	79	91	729	344
	Value $	36,274	20,409	3,070	2,291	25,575	7,805
All other kinds	M feet	.....	16	.....	.....	.....	.....
	Value $	.....	560	.....	.....	.....	.....
Total for Prairie Provinces	M feet	58,419	61,727	54,371	10,892	41,229	26,002
	Value $	2,058,590	1,398,067	2,074,621	273,093	1,480,186	711,149

FISHERIES

The fisheries of the Prairie Provinces, in point of production, have advanced very little in the past few years, chiefly owing to the semi-exhaustion of some of the smaller lakes through over-fishing and the restrictions placed on many of the large fishing areas limiting the quantity of fish which may be caught in a season. While this latter phase may be looked on as a hardship by some, yet it is a necessity if the fisheries are to be maintained.

The most interesting feature of these fisheries during this period is the increased share of the output supplied by Alberta and Saskatchewan. These provinces, possessing about one-third the total Prairie Province lake area, have increased their quota of the annual production from about 25 per cent in 1908 and 20 per cent in 1915, to 38 per cent in 1922. This has been due in great measure to the extension of the fisheries to include in their cycle of operations many of the more important northern lakes. This in turn has been made possible by improved methods of transportation in the northern regions, namely, the railway extensions reaching McMurray and Peace River in Alberta and Big River in Saskatchewan, and the Hudson Bay railway in the The Pas district.

In all three provinces the numerous lakes and rivers, amounting to nearly 31,000 square miles in area, abound in valuable food fishes. Whitefish, the most abundant species, is unexcelled in quality and is in great demand, while pickerel, tullibee, lake trout, pike, goldeyes, and sturgeon, with its attendant product caviare, also find a ready market. Other varieties include perch, mullet, catfish and ling.

The greater part of commercial fishing takes place in the winter season, when the chilled or frozen fish may be shipped to distant points. This winter catch is marketed in the Canadian interior and adjoining American states. A large demand has been created in Chicago and numerous other middle western cities, while occasional shipments have been made to such distant points as Montreal and New York. Some summer fishing also takes place, the catch being marketed in the nearby towns.

The fishing enterprises are well organized, operating collecting stations and chilling plants at central points and using motor launches, teams and sleighs to convey the packed fish to the nearest railway station. A fishing fleet of steam tugs, gasoline launches, sail boats and skiffs is also maintained, the total outlay in boats, gear, icehouses, fish-sheds and wharves reaching over three quarters of a million dollars in 1922.

Considerable progress has been made in fish culture, with five hatcheries supplying eggs and fry. In Manitoba there are three, the one at Gull Harbour, lake Winnipeg, propagating whitefish and pickerel, those at Dauphin river and at Snake island, whitefish alone. The Saskatchewan hatchery located at Qu'Appelle also distributes whitefish, while that at Banff, Alberta, specializes in game fish, namely atlantic salmon, ouananiche, rainbow, cut-throat and salmon trout.

The future of the fishing industry in the Prairie Provinces depends largely on the more extensive exploitation of the prolific northern lakes and a more intensive system of restocking, which will allow a greater catch to be marketed annually without depletion.

Manitoba

The southern portion of Manitoba with its better transportation and larger proportion of the 20,000 square miles of the whole lake area yields the great bulk of the provincial output.

The principal fishing areas in order of their importance are lakes Winnipeg, Winnipegosis, The Pas district and lake Manitoba. Other fishing districts of less importance are lakes St. Martin, Waterhen, Dauphin and Red Deer, and Buffalo bay in the Lake of the Woods.

The fishing industry of the northern lakes with The Pas as shipping centre is steadily becoming more valuable as transportation improves. Lakes Moose, Cormorant and Cumberland are also important producers and the Hudson Bay railway is bringing many more within range of the markets.

The largest single item in the fish production of Manitoba is whitefish, followed in order by pickerel, tullibee, pike, sturgeon, goldeyes and trout. Whitefish, pickerel, tullibee and pike are in nearly all the important lakes, goldeyes chiefly in lakes Winnipeg and Winnipegosis. Sturgeon are caught in such northern lakes as Cumberland, Namew and Sipiwesk, but also in lake Winnipeg. The northern lakes are the main habitat of the trout.

MANITOBA FISHING LICENSES

The following are the different kinds of licenses issued in the province of Manitoba:—

Settler's Permit.
Commercial Sturgeon Fishery License.
Domestic Sturgeon Fishery License.
Special Angling Permit for Non-Residents.

Under the special fishery licenses all licenses for commercial fishing, with the exception of sturgeon, are issued on the one form with fees varying according to kind and requirement, a separate license being required for catching each kind of fish.

Settler's Permit.—Any resident settler, including Indian, may secure a fishing permit to fish with not more than one hundred yards of gill-net, or with a dip-net or with not more than fifty baited hooks for domestic use, but not for sale or barter. Such permit shall be issued free.

Special Fishery License.—A commercial license for dip-net fishing shall authorize the use of one dip-net for the capture of suckers and other coarse fish not protected by a close season. The fee on such license shall be two dollars.

Commercial fishing is allowed in the larger lakes of Manitoba, and in most cases a limit is set on the amount of fish that may be taken during the summer or winter season, on the amount of fishing contrivance to be used, and on the time the various kinds of fish may be taken. The fees range from two to fifty dollars.

Commercial Sturgeon Fishery License.—A sturgeon fishing license for commercial fishing shall authorize the use of not more than five hundred yards of gill-net or five hundred baited hooks. The fee on such license shall be five dollars.

Domestic Sturgeon Fishery License.—A sturgeon fishing permit for domestic fishing shall authorize the use of not more than one hundred yards of gill-net or fifty baited hooks, and under this permit not more than three sturgeon may be taken in one week.

Catfish Fishery License.—A license to authorize the use of not more than five hundred baited hooks or five hundred yards of net for the summer capture of catfish may be issued for any of the waters of the province. The fee on such license shall be three dollars.

Special Angling Permit for Non-Residents.—No one other than a British subject resident in the province, or a resident settler including Indians, may fish by angling without a permit, the annual fee of which shall be five dollars.

Saskatchewan

Saskatchewan contains about 8,500 square miles of lakes, mostly in the northern half of the province. The clear, cold waters of these northern lakes produce fish unexcelled in quality and flavour which command the highest prices in the markets of Canada and the United States.

The most prolific fisheries are those of the Doré, Montreal and Turtle lake districts, and fishing is also an industry in such lakes as Waterhen, la Ronge, Jackfish and Okemasis.

The most important species taken include whitefish, pike, pickerel and trout. Whitefish, which form a large proportion of the annual catch, together with pike and pickerel, are found in nearly all the more important lakes; trout chiefly in la Ronge, Montreal and Doré lakes.

Alberta

The larger commercial fisheries of Alberta are also confined to the more northerly lakes, a very great part of the annual provincial output coming from the Lesser Slave and Peter Pond (Buffalo) lake districts in this area. Other fishing districts include Trout, Athabaska, la Biche, Pigeon and Cold lakes.

Whitefish, pickerel and pike are general in the larger lakes, trout principally in Athabaska, Cold and Lesser Slave lakes.

Saskatchewan and Alberta Fishing Licenses

There are four classes of licenses issued, namely, domestic, fisherman's, commercial and sturgeon.

Domestic Fishery License.—Any resident who is a British subject or a bona fide homesteader may secure a domestic license, entitling him, or a member of his family, to fish with not more than sixty yards of gill-net, or with one hoop-net and a set line of not more than twenty baited hooks.

Fish caught under this license shall be for home consumption only and not for sale or barter. The annual fee for this license shall be two dollars.

Indian and Half-breed Permit.—Any Indian or half-breed resident may secure an annual permit, free, to fish with not more than sixty yards of gill-net for domestic use, but not for barter or sale. Fishing for necessary daily consumption, but not for curing or hanging, may be carried on during the close seasons.

Fisherman's and commercial licenses are issued on the one form headed *Commercial and Fisherman's Fishery License* and fees are charged according to the requirements governing the kind of fish caught, a separate license being required for catching each kind of fish.

Fisherman's License.—Any resident who is a British subject or a bona fide homesteader may secure a fisherman's license, entitling him to fish with not more than three hundred yards of gill-net or two hoop nets or a set line having not more than 200 baited hooks in the waters stated in the license. The fee for this license shall be five dollars.

Commercial License.—Any resident who is a British subject may secure a commercial license, entitling him to fish with not more than six hundred yards of gill-net in the waters stated in the license. The fee for this license shall be ten dollars. Such license will be issued for the larger lakes only and will be good for the season—summer or winter only—for which it is issued.

An Indian or half-breed permit, domestic license, fisherman's license or commercial license shall authorize the taking of all kinds of fish except sturgeon.

Commercial Sturgeon Fishery License.—A sturgeon commercial fishing license shall authorize the use of not more than five hundred yards of gill-net or five hundred baited hooks for which the annual fee is five dollars.

Domestic Sturgeon Fishery License.—A sturgeon domestic fishing permit, under which not more than three sturgeon may be taken in one week, shall authorize the use of not more than one hundred yards of gill-net or fifty baited hooks.

Special Angling Permit.—Angling or trolling in waters frequented by trout, grayling or rocky mountain whitefish is prohibited except by permit. This annual permit fee is two dollars for British residents, and one dollar for a single day or five dollars for the season for non-residents.

For more detailed information regarding fishing regulations in Alberta, Saskatchewan and Manitoba write to the Department of Marine and Fisheries, Ottawa.

YIELD AND VALUE OF THE FISHERIES IN THE PROVINCE OF MANITOBA, SASKATCHEWAN AND ALBERTA DURING THE CALENDAR YEAR 1922

Kind of Fish	Manitoba		Saskatchewan		Alberta	
	Quantity	Value	Quantity	Value	Quantity	Value
	cwt.	$	cwt.	$	cwt.	$
Catfish	778	7,333	.....	.....	.....	.....
Goldeyes	2,818	26,777	22	264	.....	.....
Mixed fish	.....	.....	2,432	4,741	.....	.....
Mullets	5,499	11,561	2,106	11,632	40	80
Perch	483	3,292	75	525	.....	.....
Pickerel	54,175	355,216	1,711	12,946	1,865	10,853
Pike	21,272	70,243	2,879	20,612	1,561	5,768
Sturgeon	874	29,547	56	740	.....	.....
Caviare	6	1,475	.....	.....	.....	.....
Trout	332	2,656	1,482	13,813	2,310	26,900
Tullibee	41,511	133,024	223	1,545	315	1,300
Whitefish	36,579	267,692	21,027	178,519	39,598	286,338
Totals 1922	.....	908,816	.....	245,337	.....	331,239
" 1921	.....	1,032,963	.....	243,018	.....	408,868
" 1920	.....	1,249,607	.....	296,472	.....	529,078

FISH CAUGHT IN PRINCIPAL FISHING DISTRICTS, 1922

Manitoba

Fishing District	Perch	Gold-eyes	Pike	Picker-el	Stur-geon	Trout	Tulli-bee	White-fish	Mixed Fish	Mullets
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Lake Winnipeg	138	3,146	3,339	21,428	251	.....	37,885	26,447	778	407
Lake Winnipegosis	.....	436	13,435	18,328	.....	.....	106	7,222	.....	3,836
The Pas	.....	5	374	504	623	332	104	1,977	.....	677
Lake Manitoba	310	.....	3,460	12,000	.....	.....	2,900	776	.....	390
Lake St. Martin	35	.....	130	120	.....	.....	72	30	.....	70
Lake Waterhen	.....	.....	345	750	.....	.....	8	180	.....	30
Lake Dauphin	.....	274	114	860	.....	.....	416	.....	.....	64
Buffalo Bay	.....	4	75	185	.....	.....	20	.....	.....	25

Saskatchewan

Des Isles lake	.....	.....	35	6	.....	36	.....	120	20	20
Onion lake	.....	.....	186	15	.....	.....	28	603	50	53
Jackfish lake	.....	.....	358	249	.....	.....	.....	1,786	100	147
Turtle lake	.....	.....	168	.....	.....	.....	.....	2,787	88	120
Waterhen lake	.....	.....	128	87	.....	.....	22	1,690	153	170
Ile à la Crosse	.....	.....	141	159	.....	.....	78	1,361	129	107
Doré lake	.....	.....	525	280	.....	63	.....	6,115	1,041	58
Okemasis lake	.....	.....	58	89	.....	.....	39	1,774	191	135
Montreal lake	.....	.....	330	143	.....	595	.....	3,633	242	323
Candle lake	.....	.....	217	63	.....	.....	.....	64	60	118
Lac la Ronge	.....	.....	269	193	.....	788	33	647	247	265
Green lake	.....	.....	12	6	.....	.....	2	148	20	.....
Lowes lake	75	.....	402	402	.....	.....	12	271	11	134
Qu'Appelle Valley	.....	.....	21	5	.....	.....	9	25	5	3
Katepwe lake	.....	.....	4	7	.....	.....	.....	.....	6	.....
Devil's lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	210
Saskatchewan rivers	.....	22	25	7	56	.....	.....	3	80	228

Alberta

Wabamun lake	.....	.....	250	130	.....	.....	.....	1,410	.....	.....
Lesser Slave lake	.....	.....	405	747	.....	4	70	15,402	.....	40
Athabaska district	.....	.....	10	14	.....	.....	185	206	.....	.....
Buffalo lake	.....	.....	40	60	.....	.....	.....	15,520	.....	.....
Cold lake	.....	.....	206	10	.....	2,306	.....	1,660	.....	.....
Edson district	.....	.....	11	.....	.....	.....	.....	82	.....	.....
Moose lake	.....	.....	20	.....	.....	.....	.....	80	.....	.....
Pigeon lake	.....	.....	98	9	.....	.....	.....	1,520	.....	.....
Sturgeon lake	.....	.....	6	.....	.....	.....	.....	75	.....	.....
Trout lake	.....	.....	140	40	.....	.....	.....	2,460	.....	.....
Lac Ste. Anne	.....	.....	118	116	.....	.....	30	212	.....	.....
Lac La Biche	.....	.....	257	739	.....	.....	30	971	.....	.....

MAP SHOWING
PRINCIPAL COMMERCIAL FISHERIES
OF
MANITOBA, SASKATCHEWAN
AND
ALBERTA
Scale of Miles
LEGEND
Fish Hatchery
Canning and Curing Plants
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
Black Bay
ATHABASKA
Whitefish
Pike
Pickerel
Tullibee
Trout
Peace R.
Peace River
REINDEER L.
SOUTHERN INDIAN L.
Churchill R.
Sturgeon
Nelson R.
LESSER SLAVE L.
Whitefish
Tullibee
Trout
Pickerel
PETER POND L.
BUFFALO L.
Whitefish
Pickerel
Pike
LAC LA BICHE
Whitefish
Pickerel
Pike
TOUCHWOOD L.
Whitefish
WOLF L.
Whitefish
COLD L.
Whitefish
Pike
Trout
DESISLES L.
Whitefish
LAC LA PLONGE
Whitefish
Trout
LA CROSSE L.
Whitefish
Pickerel
Pike
GORE L.
Whitefish
Pickerel
Pike
Trout
MONTREAL L.
Whitefish
Trout
Pike
LAC LA RONGE
Whitefish
Pickerel
Pike
Trout
SIMONHOUSE
Whitefish
ATHAPAPUSKOW L.
Whitefish
CORMORANT L.
Whitefish
Pickerel
Pike
REED L.
Trout
WEKUSKO L.
Whitefish
WINTERING L.
Whitefish
SIPIWESK L.
Sturgeon
MOOSE L.
Whitefish
Pickerel
Pike
Trout
L. ST. ANN
WABAMUN L.
Whitefish
Pickerel
Pike
PIGEON L.
Whitefish
Pike
MINISTIKIWAN
Whitefish
Pike
FROG L.
Whitefish
BRIGHT L.
GRAND L.
Whitefish
BRONSON L.
Whitefish
TURTLE L.
Whitefish
Pike
CANDLE L.
Whitefish
Pike
CUMBERLAND L.
Sturgeon
COLE L.
Whitefish
Pickerel
Pike
CEDAR L.
Sturgeon
JACK FISH L.
Whitefish
Pickerel
Pike
HURRAY L.
Whitefish
Pike
WATERHEN L.
Whitefish
Pike
REINDEER L.
Pickerel
Pike
WINNIPEGOSIS L.
Whitefish
Pickerel
Mullets
Pike
Dauphin R.
WATERHEN L.
Whitefish
Pickerel
Pike
Whitefish
Pickerel
Sturgeon
Tullibee
Pike
Perch
Goldeye
LAKE
Snake I.
ST. MARTIN L.
Whitefish
Pickerel
Pike
Gull Harbour
LOWES L.
Whitefish
Pike
DAUPHIN L.
Pickerel
Tullibee
L. MANITOBA
Whitefish
Pickerel
Tullibee
Pike
Perch
QuAppelle
WINNIPEG
Banff
Bow R.
Red Deer R.
Saskatchewan R.
South Saskatchewan R.
Assiniboine R.
Qu'Appelle R.
Battle R.
Beaver R.
Waterhen R.
English R.
Prepared in the Natural Resources Intelligence Service
Department of the Interior

WATER POWERS

Cheap power is a resource essential to the development of other natural resources. Water-power is a prime mover which can be used directly for mechanical operations or indirectly through the medium of electricity. In other words, power can be used either at the site or at a distance therefrom. Improvements in electrical transmission have greatly widened the effective radius of water-power and have brought distant markets hitherto unsupplied within reach of the power site.

Alberta, Saskatchewan and Manitoba are peculiarly fortunate in having within their boundaries important water-powers and fuel resources. With the proper co-ordination of the administration, investigation and exploitation of these two resources there need be no doubt about the fuel and power needs of the three provinces being adequately met.

In the southern and most thickly populated portions of these provinces where agriculture is the principal industry, the river gradients are flat and opportunities for water-power development are few. In the Rocky mountains, however, and in the Laurentian formations of northern Alberta and Saskatchewan and northern and eastern Manitoba, there are many large rivers with numerous and important power sites readily feasible of development. The Bow and upper Saskatchewan in the west; the Peace, Athabasca, Slave, Churchill, Reindeer, Saskatchewan, and Nelson in the north and the Winnipeg in the east, afford vast power possibilities which only await a market for their complete development.

In northern Saskatchewan and in northern and eastern Manitoba recent discoveries of valuable mineral deposits will doubtless provide a market for a considerable development of hydro-electric power, while untouched resources of timber throughout the north will require the development of many of the water-powers for their proper exploitation.

Utilization of water-power has so far been confined chiefly to areas surrounding the centres of Winnipeg and Calgary. On the Winnipeg river the city of Winnipeg and the Winnipeg Electric Railway Company have installations which total 105,000 horse-power, and a further development is in course of construction for the Manitoba Power Company which will have an initial installation of 56,000 horse-power and an ultimate capacity of 168,000 horse-power. This power is transmitted to Winnipeg and is also utilized as far west as Portage la Prairie and as far south as Carman and Morden. The industrial expansion of Winnipeg which has been most marked in the past ten years has resulted from an adequate supply of cheap hydro-electric power. On the Bow river the Calgary Power Company possesses two hydro-electric developments with installations totalling to 31,500 horse-power. These plants together with a small installation on the same river owned by the Calgary Water Power Company provide the city of Calgary with a very valuable supply of cheap hydro-electric power. Other small water-powers have been developed among which may be mentioned two on the Minnedosa river supplying in part the requirements of Minnedosa and Brandon, also two owned by the Canadian Pacific Railway Company in Alberta, one supplying the demands of their hotel at lake Louise and the other operating the mechanical equipment of their irrigation dam at Bassano.

A complete investigation of the power possibilities of the Prairie Provinces has by no means been made and detailed information is available for only a few of the possible power sites. Sufficient general information has been gathered, however, to permit of a fair estimate of the amount of power available on the main rivers.

The following table outlines briefly the power available on the main rivers of Manitoba, Saskatchewan and Alberta.

MANITOBA

River	Undeveloped Power	Developed Power
	Horse-power at ordinary minimum flow 80% efficiency	Horse-power installed
Berens	11,450	
Big Black	5,139	
Bloodvein	4,100	
Burntwood	9,060	
Churchill	325,500	
Dauphin	16,960	
Grass	5,131	
Hayes	7,611	
Minnedosa	.....	1,125
Nelson	2,443,320	
Pigeon	24,880	
Saskatchewan	58,614	
Waterhen	5,684	
Winnipeg	249,790	*104,900
Total	3,167,239	106,025

SASKATCHEWAN

Black	72,550	
Churchill	255,870	
Geikie	2,450	
Rapid	5,927	
Reindeer	93,070	
North Saskatchewan	3,439	
Saskatchewan	72,240	
Sturgeon-weir	5,660	
Total	511,206	

ALBERTA

Athabasca	97,795	
Bow	14,852	32,380
Brazeau	2,360	
Clearwater	3,925	
Elbow	3,400	
Peace	19,000	
Nortn Saskatchewan	4,700	
Red Deer	1,616	
Spray	1,532	
Slave	222,500	
Total	371,680	

*Development under construction at Great Falls.

The water-powers of the Prairie Provinces are administered by the Department of the Interior through the Dominion Water Power Branch in accordance with the Dominion Water Power Act of 1919 and regulations pursuant thereto made by Order in Council of October 31, 1921. A brief summary of these regulations follows:—

Synopsis of Dominion Water Power Regulations

1. Every applicant for a license to divert, use or store water for power purposes shall file with his application to the Director of Water Power physical, financial and other information as outlined in the regulations.

2. Publication of notices of this application and local hearings in regard thereto may be required.

3. A survey permit if necessary may be issued to the applicant to enable him to make the surveys and investigations necessary to the preparation of general lay-out plans. This conveys no priority to the applicant.

4. A priority permit may be issued in regard to the consideration of preliminary lay-out plans. This priority is limited to one year but may be extended under certain conditions; it is not granted unless the preliminary information as to the feasibility of the scheme and the financial ability of the applicant is satisfactory. Priority permits are designed to protect the applicant where the surveys and investigations necessary to the preparation of general lay-out plans will involve considerable expense; the permit does not lay the Minister under any obligation to grant a concession.

5. If the general lay-out plans are satisfactory and the Director recommends the granting of a concession the Minister may issue an Interim License designed to cover the construction period of the works. This license embodies the special terms of the concession in regard to construction plans, expenditures, power to be developed, date of completion, etc., and, by reference, incorporates the regulations in force at the time of its issue.

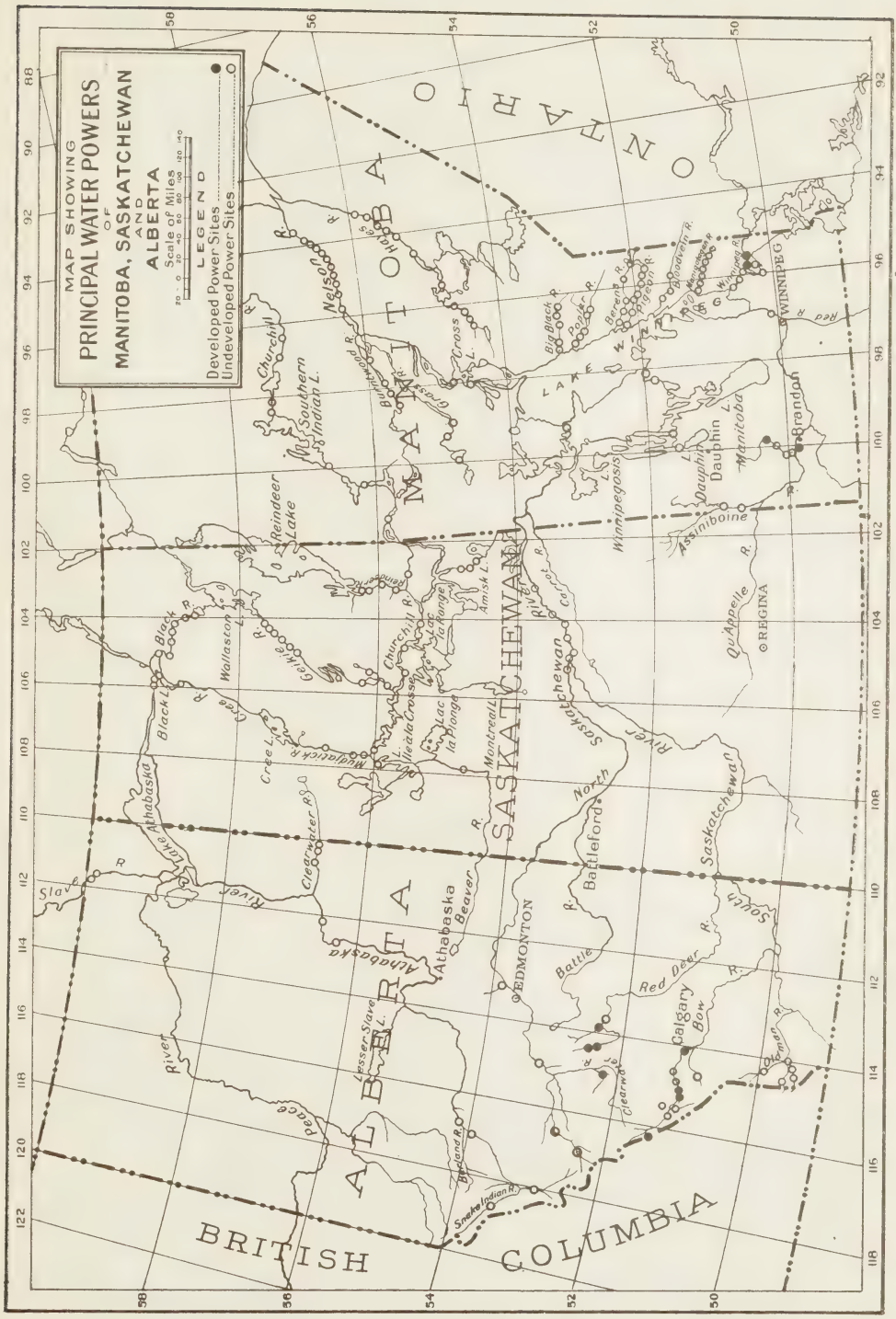
6. After the issue of the interim license, general construction plans must be submitted and approved, certain rentals and deposits also become due, and there is provision for inspection; extensions of time; penalties for default; operation pending issuance of final license; also other appropriate provisions for the protection of the Crown and of the interim licensee.

7. Upon the satisfactory completion of the development the Minister is required to issue a Final License, the term of which shall not exceed fifty years. There is provision for renewal or termination of this license. If the license is terminated, compensation is provided upon the basis set forth in the regulations. Rentals based upon the capacity of the installation are imposed; the rental is subject to revision at the end of the first twenty years of the license and every ten years thereafter; the principles of such revision and the protection provided to the licensee are set forth in the regulations. The regulation of rates charged to consumers is also provided for.

8. Other provisions concern: care of lands; maintenance and operation of works; increase of output up to capacity; securing enlarged development; stream regulation and control; appraisals; accounting; transfers; penalties for default; and also some miscellaneous provisions.

9. Where the application is for a small water-power not exceeding 500 horse-power capacity special simplified regulations may be promulgated, but in such case the term is reduced to twenty years, with renewals for further periods not exceeding five years each; no compensation is provided unless the development is taken over before expiry of the term.

For more detailed information regarding water-power regulations write Dominion Water Power Branch Department of the Interior, Ottawa.


MAP SHOWING
PRINCIPAL WATER POWERS
OF
MANITOBA, SASKATCHEWAN
AND
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Scale of Miles
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Developed Power Sites
Undeveloped Power Sites
Prepared in the Natural Resources Intelligence Service
Department of the Interior
MANITOBA
SASKATCHEWAN
ALBERTA
BRITISH COLUMBIA
ONTARIO
LAKE
Hudson Bay
Nelson R.
Churchill R.
Southern Indian L.
Reindeer Lake
Wollaston L.
Black L.
Athabaska L.
Slave R.
Great Slave L.
Lesser Slave L.
Peace River
Athabaska R.
Clearwater R.
Athabaska
Beaver
Churchill
Montreal L.
Lac la Ronge
Amisk L.
Cumberland L.
Saskatchewan River
North Saskatchewan
South Saskatchewan
Battleford
Battle R.
Red Deer R.
Bow R.
Calgary
Clearwater
Bighorn R.
Brazeau R.
Snake Indian R.
Beaverhill L.
EDMONTON
REGINA
Qu'Appelle R.
Assiniboine R.
Dauphin L.
Manitoba
Winnipegosis L.
Swan R.
Pasquia R.
Carrot R.
Red Deer R.
Big Black R.
Pasquia R.
Bayern R.
Pilgrim R.
Whitemouth R.
Winnipeg R.
Red R.
WINNIPEG
Brandon
Cross L.
Burntwood R.
Gods R.
Nelson R.
Churchill R.
Wollaston L.
Black R.
Wintego R.
Mudjatick R.
Cree L.
Gilbert R.
Reindeer L.
Lac la Ronge
Montreal L.
Amisk L.
Carrot R.
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Red Deer R.
Big Black R.
Bayern R.
Pilgrim R.
Whitemouth R.
Winnipeg R.
Red R.
WINNIPEG
Brandon

PARKS

The Canadian National parks cover an area of nearly 10,000 square miles of the finest scenery on the continent, of which more than 7,500 square miles are located in the Prairie Provinces. This great area which was primarily set aside for the benefit and enjoyment of the people of Canada has developed into one of the greatest revenue-producing resources of the country.

The growing popularity of the parks both to Canadian and foreign tourists is clearly shown in the increasing number of visitors to the great mountain areas each year. During the fiscal year ending March 31, 1922, over 175,000 tourists visited the parks and of these 65,000 were from foreign countries. On the basis of an estimated expenditure of $300 each by visitors coming into the country, tourist traffic to the parks from foreign countries represented a revenue of $19,500,000, while approximately $15,000,000 was kept in the country by attracting Canadians to their own parks.

Sanctuary conditions in the parks have brought about a wonderful increase in wild life in these areas. Bears, moose, deer, and many other animals, together with a variety of birds may be seen from the motor roads and trails throughout the parks.

The administration of the Migratory Birds Convention Act also comes under the Commissioner of Canadian National Parks. Certain areas of marsh lands and lake and river shore are set aside as breeding grounds for migratory birds in which they are protected the year round. Eighteen sanctuaries have already been reserved in the west and many other areas are under consideration.

The following areas are administered by the Canadian National Parks Branch:—

SCENIC PARKS AND RESERVES

Name of Park	Location	Areas
Banff National	Alberta, east slope of Rockies	2, 751 sq. miles
Jasper	Northern Alberta	4,400 "
Waterton Lakes	Southern Alberta adjoining United States Glacier Park	220 "
Vidal's Point	Saskatchewan	17 acres
Little Manitou Lake (Recreational area)	Saskatchewan	Vacant lands around lake
Brereton Lake " "	Manitoba	" "
Falcon lake " "	Manitoba	" "
Nora Lake " "	Manitoba	" "
West Hawk Lake " "	Manitoba	" "
Fort Pelly " "	Saskatchewan	800 acres

ANIMAL PARKS

Buffalo park	Near Wainwright, Alta	159 sq. miles
Elk Island park	Near Lamont, Alta	51 "
Nemiskam antelope reserve	Southern Alberta	9 "
Wawaskesy antelope park	Alberta	54 "
Menissawok antelope park	Saskatchewan	17 "
Moose Mountain buffalo reserve	Saskatchewan	1,440 acres

HISTORIC SITES

Fort Prince of Wales	Churchill, Man.
Battlefield of Fish Creek	Batoche, Sask.
Frog Lake Massacre	Near Lloydminster, Sask.

BIRD SANCTUARIES

(a) *Permanently reserved*	sq. miles
Many Islands lake, Alberta	21
Buffalo lake, Alberta	25
Ministik lake, Alberta	51
Miquelon lake, Alberta	11
Lac la Biche Alberta	92
Pakowki lake, Alberta	45
Birch lake, Alberta	15
Last Mountain lake, Saskatchewan	92
(b) *Temporarily reserved*	
Quill lake, Saskatchewan	250
Johnston lake, Saskatchewan	126
Cabri lake, Saskatchewan	4
Lenore lake, Saskatchewan	38
Big Stick lake, Saskatchewan	20
Crane lake, Saskatchewan	23
Chaplin lake, Saskatchewan	73
White Bear lake, Saskatchewan	3
Redberry lake, Saskatchewan	31
Manito lake, Saskatchewan	56

FURS AND GAME

In their immense areas of country with its varied topography the Prairie Provinces have rich resources in wild fur-bearers and game. The appreciation of fur in the world of fashion and commerce and the desire of thousands of people under the strain of modern business to mingle with nature in the pleasures of fishing and hunting, give to wide stretches of country that are the natural haunts of wild life both a commercial value and a value that dollars can never convey. The total value of pelts taken in Canada during the season 1921-22 was $16,458,621 to which Manitoba, Saskatchewan and Alberta contributed $1,679,646, $1,673,679 and $1,356,338 respectively. The fur-bearers contributing for the most part to these figures were in order of value, muskrat, beaver, mink, marten, and fox (red, cross, white, black and silver).

Through legislation and the co-operation of the federal and provincial governments and various private organizations in the protection of all kinds of birds and fur-bearing animals benefits have resulted not only to the community as a whole but also to individual trappers, traders and hunters, and it is confidently hoped that under wisely applied methods of conservation the fur and game wealth of the Prairie Provinces will be permanently maintained and increased. In recent years the status of western Canada's commerce in fur has improved as a result of the regular auction sales that now attract buyers from many countries.

Revenue.

The following table gives the revenue obtained by the provincial governments from the issuing of licenses to sportsmen and farmers for hunting big game and game birds. This revenue has increased latterly on account of legislation which imposes certain fees and taxes on those engaged in the commerce in furs:—

Province	1915		1920		1921	
	Number of Licenses	Revenue	Number of Licenses	Revenue	Number of Licenses	All Sources Revenue
		$		$		$
Manitoba	12,700	31,700	27,700	84,700	15,900	74,500
Saskatchewan			10,000	27,800	18,500	35,300
Alberta	13,700	31,300	18,000	47,800	17,900	79,000

In 1921, big game, comprising moose, deer, caribou, mountain sheep and goats, was taken to the amount of 1,159; 927, and 2,361 head for the provinces of Manitoba, Saskatchewan and Alberta respectively.

Fur Farms.

In 1921 the Prairie Provinces contained twenty-five fur farms, which increased to fifty-three during 1922, distributed as follows,—Manitoba 20, Saskatchewan 9, and Alberta 24. The total value of farms in 1921 was $189,000 and the value of the animals $610,785. The fifty-three fur farms include forty-six fox, three muskrat, two beaver, one skunk, and one karakul sheep farm.

Farming Wild Game.

An experiment is now being tried that suggests a way to the development of an expansive and profitable industry, namely, the wild bird farm. Such a farm is located in central Alberta and between fifty and sixty different breeds of wild game birds are bred there, including wild ducks, turkeys, pheasants, grouse, geese, prairie chicken, quail, guinea hens and peafowl.

GAME LAWS 1922

OPEN SEASON ☐ CLOSED SEASON ▩

MANITOBA

Bag Limit—Deer etc. one male adult only, Ptarmigan, 15 a day, total 50 for the season. Geese 10 a day, Ducks 20 a day before Oct. 1st, 40 a day thereafter, 200 for the season. Prairie Chicken, Partridge and other grouse, 25 in all.	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Moose, Deer, Cabri or Antelope, Reindeer or Caribou.	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	1-10
Otter or Beaver,(south of 53rd parallel.) Beaver,(north of 53rd parallel.)	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Otter,(north of 53rd parallel.)	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	☐	☐
Fisher or Pekan, Sable, Marten, or Mink,(north or south of the 53rd parallel.)	☐	☐	☐	▩	▩	▩	▩	▩	▩	▩	☐	☐
Prairie Chicken, Partridge and Grouse of any variety.	▩	▩	▩	▩	▩	▩	▩	▩	▩	1-15	▩	▩
Fox or Lynx,(north of 53rd parallel.)	☐	☐	☐	▩	▩	▩	▩	▩	▩	▩	☐	☐
Muskrat,(north of 53rd parallel.)	▩	▩	1-15	☐	1-15	▩	▩	▩	▩	▩	☐	▩
Muskrat,(south of 53rd parallel.)	▩	▩	1-15	☐	▩	▩	▩	▩	▩	▩	▩	▩
Bison or Buffalo, Female or Fawns of Deer under one year of age, Elk or Wapiti	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Swan, Mourning Dove, Wild Pigeon, Band Tailed Pigeon, Little Brown Crane, Sandhill Crane, Whooping Crane, Quail or Curlew, Wood Duck, Elder Duck, Sandpiper, Pheasant and Hungarian Partridge.	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Brant, Wild Geese, Scooter or Wild Duck, Black Breasted or Golden Plover, Wilson or Jack Snipe, Woodcock or Yellow-legs.	☐	☐	☐	☐	☐	☐	☐	☐	1-15	☐	☐	☐
Ptarmigan	▩	▩	▩	▩	▩	▩	▩	▩	▩	1-10	▩	▩

SASKATCHEWAN

Bag Limit—1 Moose, 2 Deer, 2 Caribou, males only, except Caribou but not more than two animals in all. Prairie Chicken, 6 a day 30 for the season. Ducks and Geese 30 a day, total 200 for the season. Penalty for violation of the law, $10.00 to $1,000.00 or imprisonment	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Buffalo, Antelope, Elk, Female Deer, Fawns, Big Game animals (south of township 35)	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Deer, Caribou, Moose, (north of township 34).	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	1-5	1-5
Ducks, Geese, Rails, Coots, Black Breasted or Golden Plover, Wilson or Jack Snipe and Greater and Lesser Yellow-legs.	▩	▩	▩	▩	▩	▩	▩	▩	1-15	☐	☐	☐
Prairie Chicken (Sharp-tailed Grouse, and Pinnated Grouse), Ruffed Grouse (Partridge) and Canada or Spruce Grouse	▩	▩	▩	▩	▩	▩	▩	▩	▩	☐	▩	▩
European Grey or Hungarian Partridge, Sage Grouse, Cranes, Swans, Pelicans, Loons, Bitterns, Gulls, Terns and other Insectivorous Birds	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Mink, Fisher, Marten, Fox	☐	☐	☐	▩	▩	▩	▩	▩	▩	▩	☐	☐
Otter	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	☐	☐
Muskrat,(south of Township 53)	▩	▩	▩	☐	▩	▩	▩	▩	▩	▩	☐	▩
Muskrat,(north of Township 53)	▩	▩	▩	☐	1-15	▩	▩	▩	▩	▩	☐	▩
Beaver,(north of Township 53)	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	☐	☐
Beaver,(south of Township 53)	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩

ALBERTA

Bag Limit—Big Game, adult male only—1 Sheep, 1 Goat, 1 Caribou, 1 Moose, 1 Deer, 30 Ducks per day, 200 for the season, 10 Grouse, Prairie Chicken, Partridge or Hungarian Partridge per day, 50 for the season. Penalty, $10.00 to $500.00 or imprisonment.	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Mountain Sheep, Mountain Goat.	▩	▩	▩	▩	▩	▩	▩	▩	☐	☐	▩	▩
Buffalo, Elk, Wapiti, Antelope.	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Deer, Moose, Caribou	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	☐	1-5
Ducks and Geese	▩	▩	▩	▩	▩	▩	▩	▩	☐	☐	☐	1-5
Swans, Cranes	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
(*Rails, Coots,)Black Bellied Plover, Golden Plover, Wilson Snipe and Yellow Legs.	▩	▩	▩	▩	▩	▩	▩	▩	☐	☐	☐	1-5
Grouse, (Prairie Chicken, Partridge, etc.)	▩	▩	▩	▩	▩	▩	▩	▩	▩	1-10	▩	▩
Hungarian Partridge.	▩	▩	▩	▩	▩	▩	▩	▩	▩	☐	▩	▩
Hungarian Pheasant.	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Crows, Eagles, Goshawks, Pigeon Hawks, Duck Hawks, Cooper's Hawks, Hawk Owls, Blackbirds, Grackels, English Sparrows, Loons, Cormorants, Pelicans and Magpies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mink, Fisher, Marten.	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	☐	☐
Otter	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	☐	☐
Beaver	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩
Muskrat, (north N. Sask. River)	☐	☐	☐	☐	▩	▩	▩	▩	▩	▩	▩	☐
Muskrat, (south N. Sask. River)	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩

*Rails and Coots — Open season 1st September to 31st December.

These Game Laws are subject to change without notice. For latest definite information write; Chief Game Guardian, Dept. of Agriculture, Winnipeg, Man. Regina, Sask., and Edmonton, Alta.

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